American Journal of Public Health
and THE NATION'S HEALTH VOL. X NO. 2

Volume XVIII February, 1928 Number 2

What Can We Do About Measles?*

GEORGE C. RUHLAND, M. D., FELLOW A. P. H. A.
Director, Syracuse Health Demonstration
and
A. CLEMENT SILVERMAN, M. D.
Director, Bureau of Communicable Diseases Syracuse Health Department, Syracuse, N. Y.

THE ultimate conquest of measles depends no doubt upon the discovery of the specific causal agent and the development of an immunization procedure, similar to that now employed against diphtheria and scarlet fever. Perhaps the dawn of the tomorrow that will bring this achievement is not far distant; certainly the laboratory research worker is busily endeavoring to determine the etiology of this disease.

At present, however, there still seems considerable doubt as to the identity of the specific organism. Whether the green streptococcus of the Tunnicliff [1] type will prove to be the real cause, whether it is the green diplococcus of Ferry,[2] or whether these are merely variant symbionts and the true causal agent is a filtrable virus other than those mentioned, as Park [3] suggests and Degkwitz [4] insists, the future must determine.

In the meantime the health officer faces the fact that measles occurs with distressing regularity of from 2- to 3-year intervals and spreads rapidly in spite of the usual control measures.

A recent survey by the U. S. Public Health Service, based on inquiries made of several thousand university students in different parts of the United States,[5] shows that approximately 90 per cent of males and 95 per cent of females 20 years of age and over had suffered attacks of measles. This indicates fairly well the still widespread prevalence as

* Read before the Health Officers Section of the American Public Health Association, at the Fifty-sixth Annual Meeting at Cincinnati, O., October 17, 1927.

well as the high incidence of measles. The factors that are responsible and contribute to the usual rapid spread of measles are, of course, well known.

There is the exceptionally high degree of infectiousness of the disease itself, the difficulty of recognizing and so controlling the disease during the prëruptive stage, when infectivity is highest, and the unfortunate popular belief that measles is after all only a negligible disease of childhood with a corresponding indifference and lack of coöperation on part of the public. A sense of hopelessness in the face of these overwhelming adverse odds no doubt is responsible for the general lesser interest that characterizes official activity when dealing with measles.

This attitude on the part of the health officer, Dr. Godfrey [4] maintains, is an additional reason why better progress in the control of measles has not been made so far. Agreeing that with present facilities any attempt to prevent *all* measles is foredoomed to failure, he suggests that action should concentrate on a program to protect especially children under 3 years of age, since after all fully 70 per cent of all measles deaths fall within that age period.

Although Brownlee, in England,[5] urged a similar program for the protection of child life in the early age group, it appears that nowhere was a consistent effort made to try out such a plan.

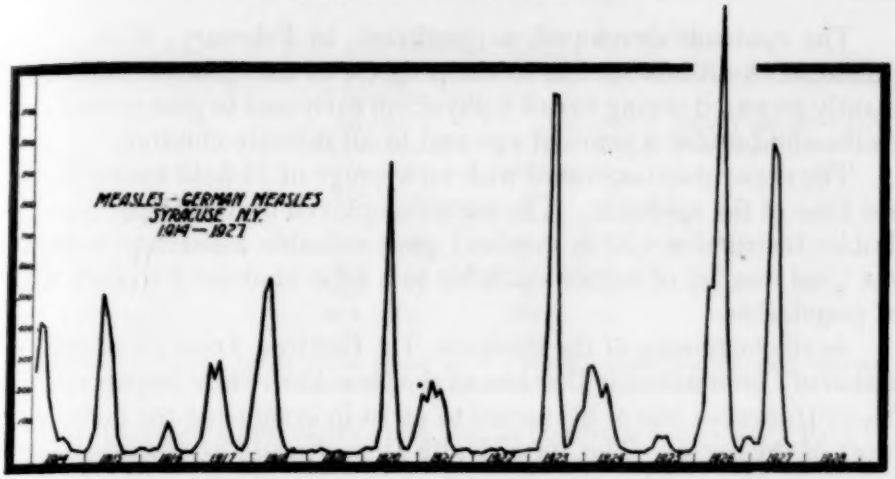
An opportunity for such a practical tryout of the plan presented itself to us in Syracuse in the late winter of 1926. A study of the history of measles in Syracuse shows that measles appears there in 3-year intervals. The outbreaks, beginning usually late in February or early in March, run through 2 years, with a summer remission each year, showing a crest of the epidemic wave in May, which then falls rapidly in June. With a record of a measles epidemic in 1923-24, it was therefore a simple matter to forecast the next epidemic for 1926-27. See Chart I.[6]

PLANS AND PROCEDURES

Knowing that an epidemic of measles was impending, the next step was to plan for action that would secure as much protection as possible for children under 3 years of age. Three things seemed especially important to this end:

1. To arouse the public, especially those families having children in the dangerous age group
2. To secure the coöperation of the medical profession
3. To develop the departmental machinery, i.e., especially the nursing staff

For the first of these steps the press was taken into our confidence. Through the daily papers announcement was made, even in the fall of the year 1925, that according to past experience Syracuse would have



Profile showing periodicity of measles at Syracuse

an epidemic of measles beginning in the late winter or early spring of 1926. It was pointed out that, contrary to common belief, measles, through complications, is a dangerous disease, especially to children under 3 years of age, and to all delicate children. Since it was difficult to recognize measles during the early stages, all children exhibiting any symptoms of a cold should be put to bed, kept separate from other children, and a physician called to pass upon the case. Warnings were also issued against the seriousness of complications which might follow if children were allowed to leave bed too early during the convalescent period.

All cases were to be reported promptly to the Health Department. The medical profession was likewise informed through the department's *Weekly Bulletin* of the impending epidemic, and the use of human convalescent immune serum was urged and offered for children of the dangerous age group. Special pains were taken to impress upon the nurses of the department the high degree of contagiousness of measles, the usual modes of transmission, early symptoms, and—above all—the great necessity of protecting children under 3 years of age and all delicate children.

The importance of discovering all contacts at the earliest possible moment and of segregating them, if possible, and the giving of human convalescent immune serum to every young and delicate contact was also stressed. Detailed information was given on the instruction of families having measles cases. Each nurse was furnished with typewritten copies of these instructions. Families under quarantine were furnished copies of the educational measles folder supplied by the State Department of Health.

The epidemic developed, as predicted, in February, 1926. The public was kept informed as to the progress of the epidemic, with constantly repeated urging to call a physician early and to give special care to the child under 3 years of age and to all delicate children.

The department operated with an average of 21 field nurses during the time of the epidemic. The nurses employed by the Department of Public Instruction (20 in number) gave valuable assistance, bringing the total number of nurses available to a ratio of about 1 to each 4700 of population.

At the beginning of the epidemic, Dr. Godfrey, Director of the Division of Communicable Diseases of the New York State Department of Health, detailed one of his nurses to assist in organizing the home visit work of the nurses. The State Health Department also furnished some human immune serum, though most of the serum used was obtained locally from convalescent patients.

Schools were not closed during the epidemic, nor were infant welfare clinics discontinued. Due to our following a generalized nursing plan, it was possible to devote the greater part of the home visit service of the nurses to the search for measles cases and the instruction of families. It was necessary to hospitalize only 24 cases because of home conditions.

STATISTICAL DATA

In dealing with the statistical facts of the 1926-27 measles epidemic in Syracuse, it should be understood that the efforts of the department centered not in the prevention of all measles but in an attempt to protect child life, especially under 3 years of age, and to lower, if possible, the mortality for that age period.

In Table I is presented the total number of cases and deaths, together with the indicated fatality per 100 cases for the epidemics of 1923-24 and 1926-27 respectively, as well as the number of cases and deaths with their fatality at different age periods.

There were reported for the epidemic of 1923-24 of German measles and measles a total of 4,722 cases with 59 deaths, or a fatality of 1.38 per 100 cases as against 5,317 cases of true measles with 18 deaths, a fatality of 0.34 per 100 cases for the epidemic of 1926-27. This seems a fairly favorable showing—the mortality rate for the 1926-27 epidemic representing a 68 per cent reduction from that of the preceding epidemic. This rate seems especially favorable when it is considered that the total number of cases for the epidemic of 1923-24 includes German measles, whereas the total for the 1926-27 epidemic counts true measles only.

TABLE I

MEASLES CASES REPORTED, DEATHS AND CASE FATALITY PER 100 CASES REPORTED, BY AGE GROUPS SYRACUSE, 1926–1927

	1923–1924[1]		*1926–1927*		*Fatality per 100 Cases*	
	Cases	*Deaths*	*Cases*	*Deaths*	*1923–1924*[1]	*1926–1927*
ALL AGES	4722	59	5223	18	1.38	0.34
Under 1 year	119	9	164	5	7.56	3.04
1 year	314	21	324	7	6.68	2.16
2 years	423	14	424	2	3.30	0.47
3 years	481	7	534	2	1.45	0.37
4 years	447	1	537	1	0.22	0.18
5 to 9 years	2492	5	2600	1	0.20	0.03
10 years and over	446	2	640	..	0.44	...

1. Figures for 1923-1924 include German measles, but it is probably unlikely that very many cases were reported; for 1924 only 111 cases of German measles were recorded.

It is interesting and significant also to compare the fatality rate of 0.34 of the 1926-27 epidemic with the modal case fatality rate for cities with a population of 100,000 or more, which, according to Sydenstricker, is about 0.6 (based on 15 years of frequencies). This will give Syracuse a rate of 43 per cent under the average for cities in this population group.

The difference in the mortality rate for the two Syracuse epidemics under consideration shows up even more markedly when these rates are considered by age groups. For children under 1 year of age the 1923-24 epidemic shows 119 cases with 9 deaths, giving a fatality rate of 7.6, as against 164 cases with 5 deaths and a fatality rate of 3.0 for the 1926-27 epidemic.

ANALYSIS OF STATISTICS

For *all* cases under *3 years* the fatality in the 1923-24 epidemic is 5.1, as compared with a rate of 1.6 for the last epidemic. It appears then that the mortality from measles in Syracuse during the 1926-27 epidemic was 69 per cent lower for the age period under 3 years, compared with the immediately preceding epidemic. The question now arises—May we accept that this improvement in mortality stands in any relation to what was done? This in turn calls for an inquiry into:

1. The nature of the epidemic, i.e., was it milder than the preceding one?
2. Was there any material difference in the proportion of susceptibles or in the age distribution in this group?
3. Are there any tangible factors in what was done that could have brought about improved results?

Nature of Epidemic—So far as the first of these questions is concerned, it is of course impossible to give absolute proof as to the virulence of the epidemic in question. There are no bacteriological standards by means of which the virulence of the contagium of measles, whatever it may be, can be tested. Nor is there clinical evidence unless we accept the impressions of the clinician as to the virulence of the epi-

demic of 1926-27 as compared with the one preceding. We must therefore fall back upon a comparison of mortality figures at Syracuse with those of other nearby cities as the only measurable factor on the basis of which the probable virulence of the 1926-27 measles epidemic may be judged.

Taking for this purpose the statistics of measles in the cities of Rochester and Yonkers, both of which reported epidemics of measles in 1926, we find the following:

	Number of cases	*Deaths*	*Fatality per 100 Cases*
Rochester	2437	17	0.70
Yonkers	3782	44	1.16
Syracuse	2714	4	0.16

It is understood, of course, that this represents a comparison for only one year of the epidemic.

The many factors that ordinarily stand as objections in comparing the general mortality of one city with that of another are also fully appreciated. However, notwithstanding all this, it yet seems not unreasonable that the specific mortality for measles in the communities in question should serve as an indicator to the virulence of measles at that time and season and for this section of the country.

TABLE II

MEASLES CASES REPORTED AND PER CENT DISTRIBUTION BY AGES
SYRACUSE, NEW YORK

	Cases Reported		*Per Cent Distribution*	
	1923–1924	*1926–1927*	*1923–1924*	*1926–1927*
	4722	5223	100.0	100.0
Under 1 Year	119	164	2.5	3.2
1 Year	314	324	6.7	6.2
2 Years	423	424	9.0	8.1
3	481	534	10.2	10.2
4	447	537	9.5	10.3
5	681	635	14.4	12.2
6	705	761	14.9	14.6
7	547	549	11.6	10.5
8	373	414	7.9	7.9
9	186	241	3.9	4.6
10–14 Years	287	405	6.1	7.8
15–24	101	154	2.1	2.9
25–34	40	51)		
35–44	14	23)	1.2	1.6
45–54	3	4)		
55–59	1	2)		
60–64		..		
65–69		1		

Figures for 1923-1924 include German measles. See note to Table I.

For all of the three cities in question 1926 was an epidemic year. For all the cities climatic conditions are about the same. For all of the cities the seasonal period of the epidemic was the same. The cities

TABLE III

NUMBER OF MEASLES CONTACTS GIVEN IMMUNE SERUM AND RESULTS, BY AGE GROUPS
SYRACUSE, 1926–1927

	Number Given Serum	*Developed Modified Measles*	*No Measles*
ALL AGES	155	74	81
Under 1	38	8	30
1	40	22	18
2	34	24	10
3	22[1]	13	9[1]
4	7[2]	3	4[2]
5	7	2	5
6	2	0	2
7	3[2]	1	2[2]
8	1	1	0
9	0	0	0
10	0	0	0
11	1	0	1

1. Of these 1 has a doubtful history.
2. Of these 1 exposure is probable but not definite.

are in comparatively close proximity to and in communication with one another. It seems difficult under these circumstances to assume that there should have been any marked variation in the virulence of measles for the respective cities which would not have affected all of them. It may be accepted therefore that the factor of virulence in the 1926 epidemic did not materially vary in favor of Syracuse.

Proportion of Susceptibles—We now examine the next point that could have influenced the mortality; namely, the proportion of susceptibles and the difference in the age distribution for this group. The history of measles for Syracuse shows a rather uniform recurrence of epidemics after about 19 months quiescence. Syracuse is a community of rather steady and average growth. There are no marked fluctuations in the loss or additions to her population. Participation of the number of susceptibles in different age groups in the epidemics has been about the same, so that the factor of an abnormal accumulation of susceptibles cannot be considered as a determining point.

In Table II is shown the number of cases according to age group for the epidemic of 1923-24 and that of 1926-27 and the percentage distribution of cases by age for the two epidemics. It will be seen that this is quite uniform for the two epidemics. Of particular interest is the per cent distribution of cases for the age group under 3 years. In the 1923-24 epidemic this group shows 856 cases, or 18 per cent of all cases reported. The 1926-27 epidemic records 930, or 17 per cent, for this same age group.

Factors bringing results—This brings us to a consideration of the third and most material point; namely, What specific results, if any, were noted in relation to specific methods employed? Is there any

TABLE IV

MEASLES CONTACTS GIVEN CONVALESCENT SERUM SPECIFIED TIME AFTER EXPOSURE AND RESULTS OBTAINED

SYRACUSE 1926–1927

Time after first exposure when serum was given	*Children Given Convalescent Serum*		
	Total	*No subsequent Measles*	*Modified Measles*
TOTAL	155	81	74
1 to 4 days	54	34	20
1 day	4	4	..
2 days	14	11	3
3 days	20	13	7
4 days	16[1]	6[1]	10
5 to 8 days	94	44	50
5 days	42[2]	19[2]	23
6 days	31	16	15
7 days	13	5	8
8 days	8	4	4
Days unknown	7	3	4

1. One of these had a doubtful history.
2. Two of these exposures were probable but not definite.

evidence that the public responded in any way to the educational campaign? It is obviously difficult to answer this question unqualifiedly, especially in such a way that would demonstrate that an improvement in popular interest in the epidemic was noted, since there are no comparable data.

It is nevertheless interesting, and undoubtedly significant, that in an analysis of 726 primary cases of measles during the recent epidemic a physician was called in 653 cases, or nearly 90 per cent, on or before the 4th day of illness. When we consider that a physician is not usually called for what appears to be an uncomplicated cold, such as the symptoms of measles in the preëruptive stage, then we are justified in concluding that this record shows a most remarkable response to the health department's educational effort.

The practice to call a physician before the 5th day after the onset of illness was undoubtedly an advantage in treating children in the under 3 years age group with human immune serum.

Tables III and IV give our experience with the use of human immune serum. Out of a total of 155 patients that received serum, 81 did not develop measles, and 74 developed modified measles. Two cases outside this group that received serum on the 9th and 10th day following exposure developed measles with complications, indicating that serum employed so late after exposure is of course useless. There was no measles fatality in the entire group. Of the entire series of 155 cases treated by serum, 112, or 72.2 per cent, were children under 3 years of age. In this group 54, or 48.2 per cent, developed modified measles; and 58, or 51.7 per cent, did not develop it.

SUMMARY

It is of course clear that, with the experience of but a single epidemic, conclusions must be limited and drawn with care. Insufficient data for the preceding epidemic makes comparison for every point impossible. Nevertheless, the following statements seem warranted:

1. The plan of Brownlee and Godfrey, to concentrate on the age group under 3 years for a reduction in the mortality of measles, seems entirely practical, and has in the management of the 1926-27 epidemic at Syracuse apparently yielded substantial reduction in the mortality of children under 3 years of age.
2. The plan can be most effectively carried out under a generalized nursing system.
3. Useful public interest and coöperation in such a plan can be stimulated and sustained to a remarkable degree by proper publicity.
4. The plan does not require new methods, but merely calls for an intensified application of known procedures.

REFERENCES

1. Tunnicliff, Ruth. The Cultivation of Micrococcus from Blood in Preeruptive and Eruptive Stages of Measles, *J. A. M. A.* 68:1028 (Apr. 7), 1917.
2. Ferry, H. S. and Fisher, L. W. Measles Toxin, *J. A. M. A.* 86:932 (Mar. 27), 1926.
3. Park, W. H., Williams A. W., Wilson, M. The Relation of the Tunnicliff and Ferry Diplococci to Measles, *A. J. P. H.* 17:460 (May), 1927.
4. Degkwitz, Rudolf, Spezifisches Masernschutzserum vom Tier, *München med. Wchnschr.* 73:181, 248 (Jan. 29 and Feb. 5), 1926.
5. Collins, S. D. *Pub. Health Rep.*, June 27, 1924.
6. Godfrey, E. S., Administrative Control of Measles, *A. J. P. H.* 16:571 (June), 1926.
7. Brownlee, J., *Brit. M. J.*, Aug. 17, 1920.
8. Thompson, I. F. Better Health, Syracuse Health Department, July 1926.

The Eleventh Annual Roll Call

SIX hundred and forty-three thousand dollars for 20 disasters abroad, $8,216,893 to relieve 690,000 people as a result of 77 domestic disasters! These are the figures given in the report of the last fiscal year of the American Red Cross.

At the time of the Mississippi Flood, many of those who watched their property being destroyed, or who suffered even greater losses which could not be redeemed by money, learned for the first time the meaning of Red Cross Disaster Relief.

The national and international program of the Red Cross is ever increasing. There are more demands for service and the Red Cross must act in the name of the people of the United States. Is it not fitting, therefore, that the Red Cross should look to the people for the support which larger membership gives? These are the reasons for membership drives:

1. That the files of enrollment in the nursing service may be kept up to date and ready for instant service
2. That disaster equipment may be constantly in readiness
3. That the public health nursing program may be kept going
4. That the teaching of home hygiene and other educational activities may be continued

"Forty-five thousand enrolled Red Cross nurses should be able to influence many times that number of persons to join and thus to participate in the work of the greatest humanitarian agency in the world." In its effort to secure 5,000,000 members the Red Cross offers a challenge to the national pride, conscience and spirit of the American people.

The Preparation and Presentation of Papers*

MAZŸCK P. RAVENEL, M. D., FELLOW A. P. H. A.

University of Missouri, Columbia, Mo.

THE FIRST requisite for a paper is having something to say which is of value. Many editors demand that the matter presented shall be original or given from a new viewpoint—a good rule, though many valuable papers consist of a review of what has been presented by others with conclusions which bring order out of chaos and give to the average reader a clear idea of existing knowledge.

All editors are pestered by authors who present potboilers, which are usually papers on something new which is proposed, or old material worked over in slightly different form. In medicine this is particularly the case, but less so in the class of papers presented at meetings like that of the American Public Health Association or to such journals as its official organ.

The subject having been selected, the presentation should be made as clearly and briefly as possible. Long historical reviews are generally out of place, though a certain amount of history will often tend to clarify what the author has to present. Quite recently it has been the practice to give long bibliographies, but most journals have taken a stand against this, since in many cases it has been perfectly evident that the authors had never read the articles, but had copied lists given by other writers, who in turn had copied from their predecessors. It was a common thing to find errors passed down through a long series of writers.

The title should be descriptive, but not an abstract of the matter presented. Ambiguous and nondescriptive titles may deprive an author of the satisfaction of being quoted, since the reviewer of literature is misled. Too many papers are built on the plan of the Negro preacher for his sermons: "First, I takes a text, then I tells 'em what I is going to tell 'em; then I tells 'em what I wants to tell 'em; then I tells 'em what I has done told 'em." A certain amount of repetition may be useful, but in general it should be avoided.

* Read before the Joint Session of the Health Officers and Public Health Education Sections of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 18, 1927.

Subheads and conclusions are useful, but the latter should be strictly in accordance with the evidence presented. Note this extract from a recent English review of an article by an American: "The reviewer would enter a mild protest at the growing habit of recording conclusions which bear little obvious relation to the data set out in the body of a paper; particularly when, as in this case, the actual heading of the final section is 'Summary and Conclusions.' "

Quotations should be correct and brief. The average reader of scientific journals is probably as conversant with literature as the average writer. A reference with perhaps a short quotation is generally all that is needed. No article should be essentially a reprint of material by other writers.

Good style is hard to acquire and some writers never master it. Everyone knows that certain articles are read with pleasure while others, which may contain better material, are exhausting. Good associations in early life are almost essential for good writing and good speech, but much can be accomplished by study, reading and practice. A good writer is never lazy about consulting the dictionary. Style manuals, such as those put out by the Government Printing Office and publishing houses, and desk books, should be in the hands of every writer. The advice to "write and rewrite, rewrite again and then revise" is good. Sir Clifford Allbutt was a master of English, and no one would have suspected that he felt obliged to give a great deal of care to his articles; yet he tells us that he made at least four drafts of a manuscript. After making a rough draft from notes, a revision resulted in the cutting out of unnecessary words, phrases, sentences and paragraphs, by which he reduced the length from 20 to 25 per cent. He then recast sentences and paragraphs which seemed ambiguous, and gave particular attention to the choice of words fitted to convey the exact meaning intended. The manuscript was laid aside and some weeks later the final revision made. In America, the late Sir William Osler stood easily first among scientific men in his command of English, both in speaking and writing; yet it is known that he often made a first draft in long hand from notes, and as many as three others on the typewriter, the last of which was submitted to the printer. With such examples, the average man should certainly not expect to turn out a finished article in one sitting.

English is a rich language, if a difficult one. The correct word can always be found. Coining new words and giving new meanings to old words should be avoided.

A few examples of poor diction will suffice: The use of "case" instead of patient; Schick used as a verb, as "I Schicked him"; "I operated Mr. Smith." The verb "operate" means "to work." Does the sur-

geon unwittingly tell us that he "worked" Mr. Smith when he operated on him? From a noted clinic we have "The lines of divergence are converging"—a contortion equalled only by the advice given by a clergyman to his congregation: "Stop, turn round, and look yourselves square in the face." Boston contributes the following: "The principle of 'hormone' activity .... was studied subsequently by Bayliss and Starling alone, and both workers ...."; "For a pittance by no means slight"; "He developed glands of the throat." .... "Study in Vienna, Berlin, Strassburg and other trans-Atlantic foci."

Examples could be multiplied indefinitely, as everyone who has a rudimentary knowledge of English and who reads literature with a modicum of care knows.

PRESENTATION OF PAPERS

Not everyone has the gift of language, and many can never become forceful speakers; but all can follow certain elementary principles and give a clear presentation of ideas if their ideas are clear to themselves. At every meeting of this Association, as well as others, the audience is punished by speakers who have no consideration for their hearers and no appreciation of the lapse of time. Enthusiasm is a good trait, but carried to excess is very trying. Many of us can recall a paper which consumed an hour and twenty minutes; another, by a distinguished guest, almost as long, whose manuscript resembled Joseph's coat of many colors; lantern slides and charts poorly made and largely illegible, though essential to the presentation. Speakers will do well to remember the reply of the bishop to the curate who asked if forty-five minutes was too long for a sermon. The bishop answered that he would not care to lay down a hard and fast rule, but his experience led him to believe that the majority of souls were saved during the first fifteen minutes. Great discoveries and matters of exceptional importance sometimes deserve a longer time for presentation, but it is always well to stop while the audience is eager for one to continue.

The most effective speakers are often those who prepare their material, familiarize themselves thoroughly with it and speak from notes, in order to follow the chosen sequence, and to avoid digressions and the use of more than the time allotted. A common mistake is to interrupt the reading of a paper by making side remarks and giving illustrations. Some can do this gracefully, but the great majority annoy their audience, break the force of what they have written and lose the thread of their argument.

If one has originality and histrionic talent, the stereotyped methods may sometimes be abandoned with advantage. We recall the pleasure

given last year by a speaker who acted a dual rôle in an alleged argument over ventilation. What is more to the point, he put it across more effectively than could have been done by an hour of the usual dry-as-dust discussion.

If time is limited, as it should be and generally is, precious minutes must not be wasted in bemoaning the fact or telling how much more information could be given "if time allowed." Apologies for lack of ability or unpreparedness are generally out of place, often insincere and always tiresome. "Mock modesty is the worst form of pomposity."

THE EDITOR

The editor deserves some consideration, though writers should realize that the publication of their articles will be greatly facilitated by furnishing properly prepared manuscripts. We can hardly expect every contributor to know all the rules adopted for various publications, in order to obtain uniformity of type, capitalization, paragraphing, etc. These may be left to the editor, but he should have a clear manuscript, correctly spelled, typewritten, double spaced, and on one side of the paper only. One of the worst sins of writers is the misspelling of proper names, though all poor spelling is inexcusable. Especial care is necessary in giving correct references, which should be indicated by numbers in the body of the paper.

There is great lack of uniformity in abbreviations for references. We recommend the list of publications with the proper abbreviations given in *The Art and Practice of Medical Writing*. Titles of books and articles should not be abbreviated.

In America the standard size of manuscript paper averages 8½ by 11 inches. This size is adapted to ordinary typewriters, to linotype machines and to filing cases. There is little excuse for using odd sizes. There should be wide margins with plenty of room left at the top and bottom of the pages. Compliance with these rules facilitates publication and lessens the cost to the journal and often to the writer, since fewer corrections need be made.

THE REMEDY

With all compassion for the difficulties of program committees, we believe that they are often responsible for the poor papers presented. It has been suggested that each section should look over the list of those who have had places on the program during the past few years, including chairmen; pick out two or three whose papers were notably poor in substance or were badly presented, or who have persistently violated the rules; and refuse to let them read papers at the next meeting. The

papers could still be offered to the journal and published or not according to the judgment of the editors.

Certainly such action would put prospective authors and speakers on their mettle, and might induce them to follow the last piece of advice which this paper will give—to study one or more of the following books:

Allbutt, T. Clifford. *Notes on the Composition of Scientific Papers.* 3rd ed., 1923, 192 pp.

Mellish, Maud H. *The Writing of Medical Papers.* 2nd ed. rev. 1925. 150 pp.

Simmons, G. W. & Fishbein, Morris. *The Art and Practice of Medical Writing.* 1925, 163 pp.

Woolley, E. C. *New Handbook of Composition.* Revised by Franklin S. Scott. 1926, 341 pp.

Fowler, H. W. *A Dictionary of Modern English Usage.* 1926, 742 pp.

Joint Report of Voluntary Agencies and Medical Profession

AN agreement on methods of coöperation has been reached between organized voluntary health agencies and the medical profession in New York State. Their joint report was accepted by unanimous consent of the House of Delegates of the State Medical Society and the Board of Managers of the State Charities Aid Association.

The joint report is regarded as significant in that it promises more "harmonious and effective development of public health in New York State." It is hoped that through this movement similar agreements may be reached in other states.

A resumé of the things agreed to by each county medical society and the voluntary health agencies is as follows:

1. To appoint members of the county medical society to serve as members ex-officio on the board of directors or the executive board of the voluntary health agencies.

2. To study and consider any program activities of any voluntary health agency for information and suggestion.

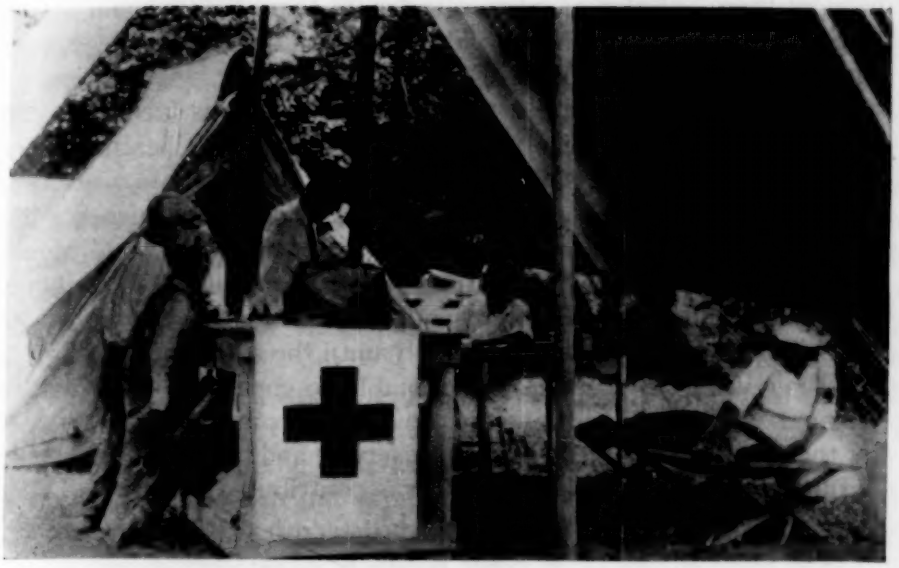
3. To appoint a special committee on public relations to confer with committees of the voluntary health agencies on matters of mutual interest.

4. To report to the State Medical Society any matter upon which no decision can be reached with the voluntary health agency, in the hope that some satisfactory settlement can be reached.

The voluntary health agencies also agree to conduct at least one open meeting annually.

The State Medical Society was represented on the Joint Committee by Dr. G. W. Cottis of Jamestown, Chairman; Dr. Wilbur G. Fish, Ithaca; Dr. W. Warren Britt, Tonawanda; Dr. Thomas P. Farmer, Syracuse; Dr. Terry N. Townsend, New York City. Dr. George M. Fisher, then President, and Dr. Joseph S. Lawrence, Executive Officer, were members ex-officio.

The representatives of the State Charities Aid Association were Dr. Livingston Farrand of Ithaca, Chairman; Homer Folks, Yonkers; John A. Kingsbury, Yonkers; Dr. H. G. Weiskotten, Syracuse, and Dr. Linsly R. Williams, New York. George F. Canfield, President, and George J. Nelbach, Executive Secretary of the State Committee on Tuberculosis and Public Health, were members ex-officio.



A Red Cross emergency hospital in one of the refugee camps. Similar facilities were provided in all camps with a doctor and nurse on duty.

Recent Health Observations in the Mississippi Flood Area*

WILLIAM DE KLEINE, M. D., FELLOW A. P. H. A.

Director, Child Health Demonstration, Salem, Ore.

THE Mississippi flood in the spring of 1927 was the largest and most devastating disaster of record in the United States. The Florida tornado in 1926 was the next largest, crippling seriously more than 24,000 families. The Mississippi flood made more than 600,000 individuals temporarily destitute. The homes of more than 750,000 people were flooded, and many completely destroyed or badly damaged.

While smaller floods in the Mississippi Basin occur nearly every spring, the 1927 flood surpassed all others. Ninety-two counties and parishes in 6 states (Kentucky, Missouri, Arkansas, Tennessee, Missis-

*Read before the Health Officers Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 18, 1927.

NOTE. Dr. DeKleine was loaned to the American Red Cross and served as Acting Medical Director in August and September, during the illness of Dr. W. R. Redden. He spent most of this time in the flood district, which gave him an excellent opportunity to observe health conditions.

sippi, and Louisiana) were either wholly or partially inundated for from 3 to 8 weeks, and in some instances for a longer period. The levees and river embankments of the Mississippi and its tributaries were broken in more than 200 places, submerging more than 20,000 square miles. The number of deaths from accidental drowning was, however, comparatively low—estimated at about 250.

The Red Cross was quick to recognize that it was facing not only an immense relief problem, but also a staggering public health problem such as had never been experienced in the United States in peace time. More than 100 refugee camps and relief stations were opened. The Red Cross fed, clothed, sheltered, and provided medical and nursing care for several weeks for more than 600,000 people, and rehabilitated their homes and properties after the flood had receded. More than 50,000 will be fed and clothed continually until the spring of 1928.

Wherever local hospitals were unable to cope with the situation, temporary hospital facilities were provided for communicable diseases, for the usual run of illness, maternity service and care of the new-born. A fund of more than $17,000,000 was contributed to meet all these needs.

The concentration of so many people in refugee camps necessitated the closest supervision and regulation of camp life in order to avoid outbreaks of smallpox, typhoid fever, and other communicable diseases. The very crude condition of some of these camps made this problem all

In perhaps the most far reaching disease prevention program this country has ever seen in peace times, the Red Cross inoculated against typhoid fever nearly 410,000 *persons and vaccinated against smallpox* 163,000 *in the 7 states affected by the Mississippi Valley flood. The doctor in this picture is vaccinating against smallpox in a Louisiana refugee camp.*

the more difficult. The inundation of so large a territory with highly polluted water presented the possibility of contaminating many of the public and private water supplies, and, indirectly, many food supplies. It was therefore urgent that drastic steps be taken immediately to prevent typhoid and other intestinal infections, and epidemics of the ordinary communicable diseases.

CONFERENCE TO ORGANIZE FLOOD AREA

It was recognized early that the state and local health authorities were not prepared to cope adequately with this staggering problem because of the lack of funds. Immediate steps were therefore taken, with their approval, to organize the entire flood area for public health control. A conference was called in Memphis, on April 28, at the instigation of W. R. Redden, M. D. Medical Director of the Red Cross. To this conference were invited the state health officers, representatives of the U. S. Public Health Service, the Army and Navy, state medical societies, the American Medical Association, and others to discuss this situation and to put in motion the necessary machinery for adequate public health control. The U. S. Public Health Service immediately assigned Senior Surgeon John McMullen to the Red Cross Headquarters as liaison officers to coöperate in bringing such assistance to the local health authorities as seemed most desirable.

The public health work was, however, directed and conducted entirely by the state and local health departments. The Red Cross Medical Service acted as a clearing house to furnish supplies and personnel when requested. The nursing service in the field and in the refugee camps was directed by Elizabeth Fox, R. N., and Malinde Havey, R. N., Directors of the Red Cross Public Health Nursing Service. The staff nurses who served in the field and in the camps carried a large share of the disagreeable burdens and inconveniences that always accompany strenuous duties of this character. Local physicians, health officials, army medical officers, and volunteers from other communities and states carried the burden of the medical and public health services. Twenty-two states responded to an appeal for experienced personnel by sending physicians, nurses, sanitary officers, and other public health workers. Three hundred and twenty-nine nurses volunteered. One man came armed with a shot gun and offered his services for sanitary duty.

The U. S. Public Health Service furnished experienced personnel who were attached to the offices of the state health departments to help direct their work. This agency, in coöperation with the Rockefeller Foundation, also helped finance a program of organizing permanent

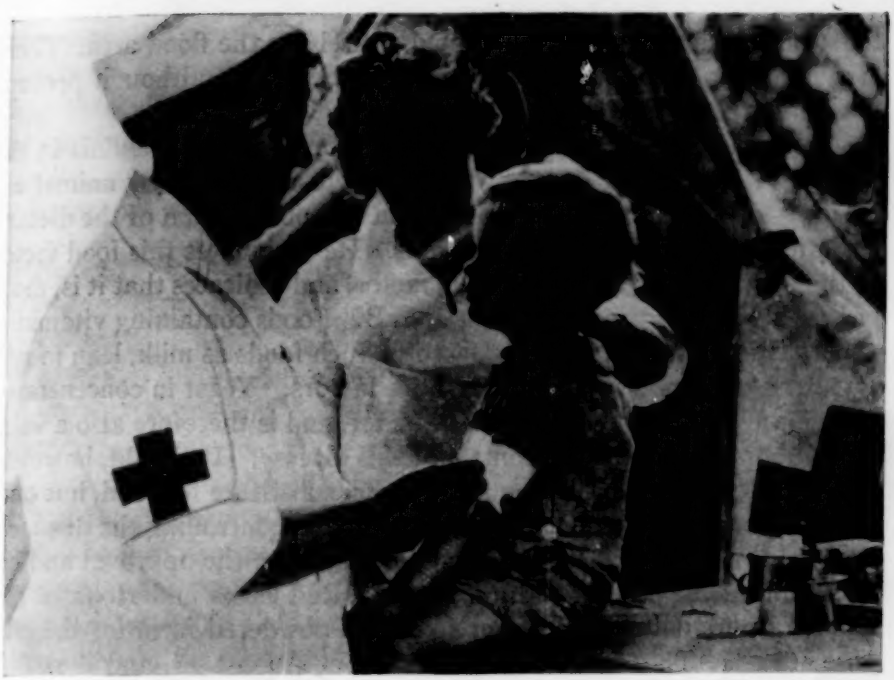
county health units, as will be described later. The Red Cross, however, is deserving of the credit of instigating and correlating the medical, nursing, and public health activities.

The correlation and direction of all these numerous agencies and activities, in which all these organizations participated, represent, we believe, an outstanding achievement and triumph in emergency public health administration. There was practically no overlapping nor duplication of effort, and there existed a minimum amount of friction and misunderstanding. It was a splendid example of effective team-work.

More than half a million individuals were immunized against typhoid fever, and about 200,000 against smallpox. More than 200,000 gallons of oil were used for mosquito control. Large quantities of quinine sulphate, estimated at 2 tons, were distributed and used for the prevention and treatment of malaria. With the exception of typhoid vaccines, the supplies were furnished almost entirely by the Red Cross.

The Red Cross also financed an extensive screening program. Under the direction of J. A. Le Prince, of the U. S. Public Health Service, more than 22,700 screen doors were constructed and installed, and more than 25,000 windows were screened. It was intended that all homes of malaria carriers should be carefully screened. This was done wherever possible, although the work was not entirely confined to that. Many houses were screened in localities where they could serve as valuable object lessons. This screening program had perhaps even greater value as an educational measure than as a means for the immediate control of malaria.

The organization of medical and nursing service and hospital facilities; the immunization program; the prompt isolation and quarantine of patients; the adoption of adequate sanitary and public health measures in the refugee camps; the supervision of food supplies in the camps; the screening program and other public health measures were no doubt responsible in a large measure for the excellent health conditions that were maintained. According to the records of the state health departments, the incidence of typhoid fever, diarrheal diseases in infants, smallpox, malaria, and certain other communicable diseases was materially lower in the flood area during the period following the flood than it has been during similar periods in the last 5 years. The figures as given by the state health commissioner of Louisiana are a fair example of what they are in other states. From January 1 to August 26, 1927, 142 deaths from typhoid were reported, as compared with an average of 463 for the same period for the last 5 years. One hundred and ninety-eight cases of smallpox were reported in 1927, as compared with an average of 713.4 for the same period in the last 5 years.



This little fellow had more exciting experiences in a week than many persons have in a life time. Rescued from the second story of his home, and carried in a small boat over the great "Father of Waters" to a Red Cross camp, he is in this picture receiving first aid treatment for his injured arm at the emergency hospital in the Vicksburg, Miss., refugee center.

This, we believe, is a triumph for public health and preventive medicine. It indicates that the incidence of communicable diseases and other illness and subsequent death rates can be controlled and materially reduced in the emergencies of peace time as well as in time of war. Secretary Hoover has designated it as a "triumph for public health and scientific medicine."

Pellagra has been a consistent problem of the South for many years. There has been a gradual increase in the incidence of this disease for the last four or five years. Dr. Joseph Goldberger, of the U. S. Public Health Service, made a survey of the flood area during July. In his report to the Surgeon General, he estimated that there were from 45,000 to 50,000 cases of pellagra in this district at the time of the survey, which is considerably more than usual. He attributes this increase largely to economic conditions. The history of the disease indicates very clearly that wherever economic conditions become stringent, the incidence of pellagra increases. Pellagra is confined largely to the cotton belt. With the exception of 1927, the cotton crop has not been very profitable for the past four or five years. This may account for impoverished rations and a subsequent increase of the disease. Whether the flood influenced it materially is not clear. It probably did to some ex-

tent; but the increase is not confined entirely to the flood area. There is a similar increase in other sections of the South, although perhaps not quite so great.

Pellagra results from the absence of certain food essentials in the diet. Dr. Goldberger has shown this conclusively both by animal experimentation and by careful regulation and observation of the dietary of patients in certain state institutions. He designates this food factor as the pellagra preventing, or P. P., factor, and indicates that it is, more or less, always associated with vitamin B. Foods containing vitamin B generally also contain the P. P. factor. Such foods as milk, lean meats, eggs, and certain vegetables have both factors. Yeast in concentrated form is well supplied with the P. P. factor, and is therefore also a valuable aid or remedy for the control of this disease. It should, however, be understood that yeast cannot serve as a substitute for food, but only as a temporary relief measure for treating and controlling the disease.

Upon the advice of Dr. Goldberger, and with the approval and cooperation of the state health officers, the Red Cross undertook to distribute a pure culture of brewer's yeast in powdered form for the purpose stated. This work was started about August 15, and is still in progress. The yeast was shipped to the local health agencies, and was made available to physicians and all public health workers. This is probably the first time a concentrated form of yeast has been extensively used in the United States as a public health measure. It has previously been used by research students and by a few physicians in private practice. At the present writing, more than 5 tons have been distributed in the flood area. We hope to be able to collect sufficient data later through the state health departments that will indicate its value as a public health measure in the control of pellagra. This report will be published at a later date.*

Anthrax in mules and cattle was a problem in certain sections. In a few localities, the disease became a serious problem. The writer was informed by one plantation owner that he had lost 75 mules, and he estimated there had been 1,500 deaths in mules and cattle from this disease in his county. The Red Cross furnished anthrax vaccine to state veterinarians, with instructions to use it freely wherever indicated. This problem, however, was not an extensive one.

The Rockefeller Foundation and the U. S. Public Health Service were quick to recognize an opportunity to develop permanent health units in the counties of the flood area. Through a carefully coördinated plan of procedure between these agencies and the state health de-

* Those who are interested in a study of pellagra and the use of foods and yeast for its control are referred to Dr. Goldberger's reprints published by the U. S. Public Health Service.

partments, this work was undertaken in the flood counties of the 6 states mentioned, after the flood had receded. It will be financed for a limited period jointly by these organizations, with the Rockefeller Foundation and the U. S. Public Health Service assuming the major share of the burden. Wherever the local communities are willing to meet their share of the health budget, the units will be established. They have been successful in organizing full-time health units in all of the flood counties in Kentucky, Missouri, Tennessee, Mississippi, and in the majority of counties in Arkansas and Louisiana.

On the levee at Arkansas City, Ark., this Red Cross nurse vaccinated hundreds of inhabitants of the tent colony there against smallpox and immunized them against typhoid fever. These preventive measures are said to be chiefly responsible for the fact that there was no serious epidemic during the entire disaster.

In order to facilitate this work and to insure the employment of competent help, the Foundation also established a training center in Indianola, Sunflower Co., Miss. This training center also functions as the health department for Sunflower County. The director of the center acts in the capacity of health officer for the county unit. The training consists of a short period of instruction and observation in field duties, thus preparing the students for a more practical approach to their work. On October 1, 23 physicians, 23 nurses, and 37 sanitary officers had completed their training and were returned to the communities or states which sent them. This number has no doubt increased considerably since that time.

The Red Cross and all the other health agencies mentioned have rendered a very valuable service for the health of the entire flood area. Contrary to a general impression prevailing throughout the country, the health conditions of this district have been unusually good during the past summer. It will stand as a lasting monument to public health administration and health service. The damage wrought by the disaster has been offset to a large extent by the saving of life and the prevention of illness. The physicians, the health agencies, and the public have had a practical object lesson in health administration and supervision which should leave a lasting impression and should serve as a great stimulus for the progress of public health throughout the nation.

DISCUSSION

Oscar Dowling, M. D., New Orleans, La.—Louisiana was harder hit by the flood than any other state involved. We had the water from the extreme northern part of the state and the extreme southern part of the state, extending more than 80 miles from east to west at the widest point. More than 700,000 people of our state were affected by this flood in one way or another. About 300,000 were driven from their homes. The statement of Dr. De Kleine was correct, I think, with reference to disease in Louisiana, with the exception that our records show we have not had any increase in pellagra as compared with the last 5 years. Whether we are going to have more remains to be seen. We are greatly indebted to the Red Cross, the Public Health Service, the International Health Board and state and city departments of health at various points in the United States, for valuable assistance in combating disease and in protecting the health and lives of our people.

We were fortunate in having ex-Governor Parker in charge of the work as the personal representative of Mr. Hoover and he started with the motto, "Not one life shall be lost." Three people were on the Texas-Pacific bridge when it was washed away; 2 of them were saved and 1 was drowned. Afterwards, when the refugees were beginning to return to their homes, a boat was capsized one day by people becoming excited and running to one side. This was not charged to the flood because we did not feel it should be charged that way. Therefore, our records show the remarkable results of only 1 life lost that could be charged directly to the flood.

I am happy to tell you that with the help we received from the outside and the work of our own people—because they all coöperated generously and unanimously with us—we came out of the disaster with better health than we had before which of course was most gratifying indeed. This was due we believe to the large numbers of people who were vaccinated against smallpox and immunized against typhoid, together with the service rendered in the camps, the food supplied, etc.

The flood waters first reached us the latter part of April and were with us until August. However, the state is now practically clear of the flood. The loss in financial and physical suffering no one can realize who did not see and go through it.

A. T. McCormack, M. D., Louisville, Ky.—It seems to me that this great session should not close without correlating these messages which have come to us and which are of the utmost importance to every single one of us and to the people we represent.

The emergency of a great disaster found us as unprepared from a scientific standpoint to solve its problems as we were when the World War came and the draft army was first assembled. We know that many of our boys were uselessly and needlessly destroyed because we had not prepared in advance for the solution of the problems that were then presented to the world. In the same way the Red Cross had to mobilize under its powerful influence, and with the very remarkable guidance of Secretary Hoover, the health agencies of the country, and a plan had to be worked out in the face of the disaster instead of having it all prepared in advance.

We had in a sort-of way, before the World War, prepared through the militia a second line of defence. The present problem will be met and solved if we take the combination of the papers presented, make practical their lesson in regard to permanent organization, profit by Dr. Bishop's message showing the remarkable manner in which records can be made to talk for themselves and be made standardized for all rural health departments, with the final summing up of the remarkable ac-

complishments of all of the agencies concerned when they were finally mobilized and gathered together in the flood area under the general supervision and stimulation of the Red Cross in this recent disaster. But for the future are we not going to take the lesson and learn from this emergency the necessity for having in every county in these United States a health organization, ready and prepared, around which can be mobilized those with like training and experience in other similar units over the country, so that in case of any particular disaster at any time, we can mobilize the whole health agencies of the country and focus them on the particular problem which demands solution? It can be done at the saving of millions of dollars. It can be done, as has been demonstrated here, in saving dozens, and frequently thousands of lives in each particular emergency. It seems to me that the important contribution of this whole major flood disaster was the New Orleans Conference (under the leadership of Dr. Redden of the Red Cross, Dr. Ferrell of the Rockefeller Foundation, the distinguished Surgeon General of the U. S. Public Health Service, and all the agencies involved where it was seen that this problem)—where the whole foundation of life in this vast area had been destroyed, where the possibility of healthy life had been interrupted—that these agencies were to gather together and over a period of 18 months conduct a restoration program that would enable people to live healthy lives in that fertile section again.

Are we merely going to restore the *status quo* in this vast area or are we going to demonstrate in these particular counties, through the remarkable work following this emergency, the necessity for such a foundation in every county in the United States and in the world? Whether this be done, as in the South, through the purely local control and local self-government in which we believe, or whether, as in the stronger and more centralized eastern states, through the district system that gets the power from above and proceeds downward, is not a matter of importance; but that in every district, every county, every government in the United States there shall be a permanent organization which shall be ready to carry on every day, not only during an emergency, is most important.

Because of the remarkable demonstration in the flood area in Kentucky, with a population of about 146,000 involved we were able, through the activity of our nurses and our health officers and through the mobilization of senior medical students of the University of Louisville, to inoculate against typhoid fever 75 per cent of the inhabitants in that area. And we have had less than 10 per cent of the typhoid fever which we had in any year in the past 10 years. Now this demonstration during the flood time when all the water was polluted, is the sort of thing that ought to sell the whole public health movement to the people of the other sections which have not yet had a flood. Do they want to wait until they have a disaster before they prepare? Would they want to wait until they have a fire to get a fire department?—or wait until they have a murder, a revolution and robberies and all the other violations of the law before they organize a police department? It seems to me it is just as important at this time that we make the people of the United States understand that a health department, properly organized and properly financed, with trained personnel, is just as essential to the future happiness and welfare of this country of ours as are our courts, our legislative bodies and any other portions of our civil government. That to my mind is the great lesson, the great end-result to be drawn from these three very remarkable papers that we have had the privilege of listening to here this morning.

Relief Measures During and Following the Mississippi Valley Flood*

J. H. O'NEILL

Sanitary Engineer, State Board of Health, New Orleans, La.

THE RECENT flood was, as all such floods are, a combination of synchronized events. A heavily flooded Ohio was met lower down by flood flows in the Arkansas and the White. These were due to rains in the corner of Oklahoma, Missouri, and Arkansas just at a time to bring the rivers draining that territory in concurrent flood with the Mississippi at their mouths.

A flood stage was reached in the Ohio River in March, and from that time on, with heavy rains in the various tributary valleys, the situation became more serious, and it soon became apparent that the valley was faced with the greatest high water fight in its history. The first break occurred at Walnut Bend, 278 miles below Cairo, on April 15; this was followed the next day by a break at Dorena, near New Madrid. Breaks occurred at 5 more localities in April, including a break on the west bank, about 40 miles below New Orleans, caused by a steamship running into the levee. The most serious of these was on April 21, at Stopps Landing on the east bank, about 20 miles north of Greenville, Miss., a city of 12,000 population.

Breaks occurred at 7 places in May, including the break on the east bank, about 15 miles below New Orleans, which was made purposely with a view to protect New Orleans by reducing flood heights at that city. These various breaks resulted in the flooding or partial flooding of 120 counties in 7 states and in driving 700,000 people from their homes. Nearly 600,000 of these were taken care of in 149 refugee camps. Others had issued to them rations and supplies. Three million, eight hundred thousand acres of agricultural lands were flooded.

This very brief history of the flood itself is offered as an introduction to a discussion of the main theme of the paper. It may give some idea of the duration of the fight. It cannot give more than a mere hint of its magnitude; of the length and strength of the battle line; of the constant and nerve straining vigilance to detect promptly such danger

*Read before the Public Health Engineering Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 19, 1927.

points as sand boils and bank caving; the almost superhuman efforts to strengthen defenses by raising low levees, by repairing the effects of wave wash and meeting in other ways the grim, relentless, and at times, irresistible attack of the Mississippi; nor of the really wonderful coördination of the work of the various agencies engaged in rescue; of the work of the National Guard troops, American Legion, and Texas cowboys in evacuating people and live stock from threatened areas; of the rescue fleet with its thousands of units varying from skiff and pirogue to surf boats, coast guard cutters and old paddle wheel river steamers; of the thrilling dashes through the roaring waters of a crevasse as a preliminary to a voyage over fields of cane, cotton, or corn, to collect a human cargo from house tops and trees; of the aviators who made aerial surveys to collect information for the guidance of the General Staff, located refugees for the rescue fleet, or carried physicians, nurses, drugs and vaccines to groups isolated by the turbid waters.

Stories of these are in themselves epics which will be told and retold for a long time to come. They will tell of heroic self sacrifice, of dogged courage in the face of overwhelming odds, of brilliant daring, of grim tragedy, of pathos and even of flashes of humor, but can only here be mentioned as a suggestion of a background for the problems of health and sanitation.

On April 22, an advisory committee of members of the Cabinet was appointed by President Coolidge, as President of the American Red Cross, in order to coördinate fully the resources and facilities of the government with the relief operations of the Red Cross. This committee included Secretary of the Treasury Mellon, Secretary of Commerce Hoover, Secretary of War Davis, and Secretary of the Navy Wilbur. This group met with representatives of the Coast Guard, the U. S. Public Health Service and the American Red Cross. A special committee of the Red Cross for the Mississippi Valley Flood Disaster, was established with Secretary Hoover as chairman. The purpose of this committee was, as expressed by Mr. Hoover, "to coördinate the activities of the War, Navy, Treasury and Commerce Departments into support of the Red Cross, which it was determined must continue the primary responsibility for the organization and administration of the relief measures to be taken."

Government agencies had been coöperating as in the past, but this marks the first time that government efforts were placed under the direction of the Red Cross. The efficiency and effectiveness of the relief work under this plan proved its value.

Headquarters for the conduct of all relief operations were promptly

established at Memphis. On April 28 a conference was held at Memphis to consider a program for health and medical service during the flood and for the coördination of the various agencies interested. There were present state health officers and sanitary engineers of states in the flood area; and representatives of the Medical Department of the U. S. Army, U. S. Public Health Service, American Medical Association, 7 state medical societies, and the American Red Cross Medical and Nursing Services.

The conference developed, and by a series of resolutions agreed upon the following program:

Need in any community for nurses, doctors, sanitary engineers, bacteriologists, epidemiologists, and other individuals should be made known to the state health officer, cleared through him and, when he might be unable to meet the request, he would clear for action with the Medical Director of the Red Cross.

Area Directors of the Red Cross faced with an emergency situation might clear direct with the Medical Director of the Red Cross who would then notify the state department of health of the action taken.

All personnel should be released through the same channels through which they came.

The system for obtaining needed supplies should be the same as that for personnel.

The general program of immunization should be restricted to typhoid and smallpox.

Where a case of diphtheria developed, immunization should be restricted to "contacts."

The determination of individuals to be inoculated should rest in the hands of the officer in charge and be limited as far as possible to actual contacts.

The same procedure should be followed with regard to the isolation and, when possible, the immunization in regard to all contagious diseases.

Each state health department should handle its own problem in matter of rabies.

The water in refugee camps should be chlorinated and water in private supplies recommended to be chlorinated, or boiled for thirty minutes where chlorination was impossible.

Where the milk supply did not comply with the minimum requirements of the Public Health Service, the milk was to be boiled. It was recommended that dried milk be used, where an adequate supply of fresh milk was lacking.

The extent and frequency of inspection should be determined by the state health officer in the state concerned.

The set-up of a refugee camp should be: physicians in command and necessary assistants and nurses; sanitary engineer, and supply officer; facilities for isolation; and dispensary and emergency hospital when there were no existing facilities.

Provision should be made for the proper disposition of sewage.

Garbage should be disposed of daily by scavenger service.

Adequate bathing and laundry facilities should be provided in the refugee camps.

All places where food was prepared were to be screened and under the supervision of the medical officer.

Food handlers had to meet requirements of the state health department.

The problem of mosquito control—involving malaria—is a problem which should be handled by the sanitary engineer, with whatever assistance he might need.

Chloride of lime and lime should be the general disinfectants used.

It was considered that hookworm and tuberculosis did not constitute an emergency problem at the time.

In effect this program put the responsibility for the protection of the health of the refugees and the sanitation of the camps and flooded areas where it belonged, on the state board of health, and offered to the state boards of health the resources of the American Red Cross, and through the Red Cross the resources of the U. S. Public Health Service and the trained personnel of other states, who volunteered to help in the emergency.

Fortunately most of the camps could be located where water from satisfactory city supplies could be made available. In some instances water was brought to camps in tank cars from neighboring cities. In others, chlorination of supplies by the use of chloride of lime was carried out under the direction of representatives of the health department.

Few of the camps had sewerage systems but multiple seat flyproof pit latrines provided a satisfactory substitute. Constant policing, however, was necessary to maintain cleanly and flyproof conditions. Many of the camps were electrically lighted and provided with showers baths and places for washing clothes. Kitchens and mess halls were screened.

Vaccination for smallpox and typhoid fever prevention was general. In very few instances was any opposition to this measure shown. Most of the people seemed to realize and appreciate the value of this method of protection. Isolation camps were provided and field hospitals were erected for minor surgical cases.

The small, and usually temporary encampments on the levee or on mounds offered the greatest difficulty. In some instances physicians, engineers, or sanitary inspectors were carried to these areas by airplane. They carried in a knapsack, emergency equipment and supplies, including medicines, dressings, vaccines, and chloride of lime for the treatment of water supplies. In Louisiana a laboratory boat used in shellfish control was assigned to flood duty and made a serviceable mobile unit.

At the camps opportunity was taken to do educational work on various lines. Talks were given on sanitation, mosquito control, personal hygiene, etc., illustrated, where possible, by lantern slides and moving pictures. Classes were held in child hygiene and welfare work.

Except for a few outbreaks of measles and mumps, the health records at the camps have been excellent. The health conditions in the area, as far as morbidity is concerned, were on the whole better than in normal periods.

Part of the problem included the maintenance and protection of water supplies and sewerage systems of communities threatened by the flood or affected only to a point which did not require evacuation of the town. Levees were built around water plants, or doors and windows were barricaded. Emergency power lines were run in. Extra pumps were installed to take care of leakage. This equipment comprised centrifugal pumps, with electric motor, or belt driven from tractor or truck; contractor's sump pumps with gasoline motor; or whatever might be available. Through the generosity of the manufacturers, chlorinators were loaned to state boards of health and many supplies were protected in this manner. In a few instances, where only a part of the town was flooded, or where the water was not deep enough to cause the people to leave, sewer pump motors were jacked up above flood level, shafts extended, and operations continued until the flood was over.

Following the receding of the flood waters, an organization of nearly 100 physicians, nurses, engineers, and inspectors was developed to sanitate the area. This organization included many volunteers from boards of health of states outside the Mississippi Valley.

Efforts were made to complete vaccinations of all who might have missed this treatment at the camps. Cases of diseases were investigated and measures taken to prevent spread of infection. An intensive campaign to promote the building of sanitary privies was undertaken, with really good results. Training was given local men employed temporarily as sanitary inspectors. Engineering advice was given local officials in the rehabilitation of water supply and sewerage systems. Private supplies were cleaned up and chlorinated.

Lime, chloride of lime, soap, spray cans, and crude oil were distributed and local crews were organized to clean up debris, bury or burn dead animals, and to open drainage channels, drain pools and spread oil to control mosquitoes. Medical supplies, including much quinine, were distributed liberally and where necessary; funds were furnished local chapters to provide for medical treatment for those unable to pay physicians. Hundreds of homes of malaria carriers were screened; five thousand pounds of yeast were distributed as part of the measures to prevent pellagra.

On June 5 a conference was held at New Orleans, at which there were present state health officers from the flood affected states; the Surgeon General, U. S. Public Health Service; Medical Director, American Red Cross; the Directors for the United States of the Health Division, Rockefeller Foundation; together with other representatives from these organizations.

The object of the conference was to receive reports of the state health officers in the flooded areas and to consider plans for the coöperation of the Rockefeller Foundation and the U. S. Public Health Service with the official health agencies in the flooded areas and the Red Cross in developing a permanent health program to meet the needs of the communities after the temporary program of health and sanitation of the Red Cross had been fully carried out.

The vast extent of the area involved, the large economic losses and other factors, such as the possibility of lowered resistance to disease due to poverty and hardship, and the development of pellagra made it apparent that a really effective sanitary rehabilitation and public health program was a long time job. The value of the full-time county organization, or health unit, as it is generally called, had been strikingly demonstrated during and after the flood and hence, plans were made to establish a health unit for a period of 18 months in 87 counties and parishes seriously affected by the flood.

The plans provide for a unit with the following personnel: health officer, public health nurse, sanitary inspector and clerk, with provision for travelling and incidental expenses. The budget is made up of funds from the county or parish, the state board of health, the U. S. Public Health Service, and the Rockefeller Foundation, the county's share nominally being set at 25 per cent but actually being determined by the community's ability to provide funds. Where investigation showed that the county was really unable to furnish 25 per cent of the budget, part or even all of this was contributed by the coöperating agencies.

The Rockefeller Foundation established a training school at Indianola, Miss., to train personnel to carry on the work of these units. On October 1, 45 units were in operation, 19 with full complement of personnel and 26 with from 1 to 3 people on the unit staff. In 17 more counties, plans had developed to a point where it was expected that the units would be in operation within a few weeks. This program not only seems the best and most practicable method of dealing with the post-flood problems, but since it is expected that many if not all of these units will be maintained after the 18-months period has expired, it will mark a real advance in the public health movement in the Mississippi Valley.

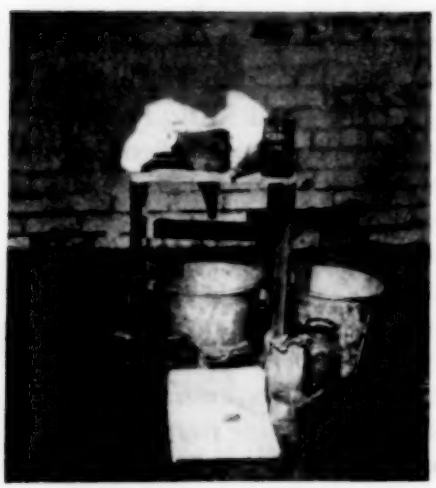
As this paper is presented to a gathering of engineers, the major part has been given to the sanitary features, but these were only a part of the task. Homes had to be repaired and rebuilt; deposits of silt removed from the towns; roads repaired; seed, tools, household equipment and clothes supplied; poultry and live stock replaced; and food

for man and beast furnished until the reclaimed lands brought forth new crops.

On September 3 the Red Cross was still feeding 62,486 persons, and 86,561 acres were still flooded. Owing to the second flood and other causes, probably 2,000,000 acres of crop land will make no substantial money returns this year. The Red Cross is still functioning in the area, which gives assurance that even though it may take some time to replace the huge losses, no one need suffer cold or hunger.

In conclusion, the writer ventures to depart from the subject of the paper to express the hope of the Valley that this great catastrophe will awaken the entire country to the realization that the Mississippi River System belongs to the country as a whole and not to the few southern states who have so frequently suffered through its floods, and that the nation, which built the Panama Canal and which counts its surplus funds by the hundreds of millions, will exert every effort to bring this mighty river under control; in brief, the hope and trust that the recent flood has been great enough to be the last one.

Purifying Mississippi Flood Water



Simple Equipment Used

EPIDEMIOLOGIST in the city of Baltimore, Md., V. L. Ellicott, M.D., found that many of the refugees would probably be without satisfactory drinking water on their return to their homes. He, therefore, experimented with the method used at the Montebellow Filtration plant in Baltimore, and found that the addition of one level teaspoonful of alum and one-half level teaspoonful of lime to a bucket of river water, dissolved, stirred for a few minutes and poured through a filter of muslin and absorbent cotton produced a perfectly clear water in a few minutes.

He gave demonstrations to the refugees in the camp and to groups of people living in flooded or partially flooded territory. Instructions, of course, were given for sterilizing the water with chloride of lime or by boiling after filtration.

Dental Hygiene Aspects of the School Health Problem*

HAROLD DEWITT CROSS, D. M. D., FELLOW A. P. H. A.

Forsyth Dental Infirmary, Boston, Mass.

WE ARE greatly indebted to Dr. Rogers † for giving us such a complete picture of the school hygiene activities of the country. While it does not appear to be a serious matter whether school hygiene is done by the school or health department, it is quite evident that one or the other should attend to it, with full coöperation and without interference by the other.

Suitable scientific medical inspection is undoubtedly of great advantage to the school child, and should be carried out as thoroughly as possible until we are able to have most of this work done in the preschool age. Meanwhile, as Dr. Rogers points out, we must endeavor to keep our figures of "corrections" fairly close to those representing "defects." We must not overlook the responsibility, implied at least, to correct the defects discovered. The statement that "malnutrition is the source of practically all defects" in school children is undoubtedly true, although it is only within a very few years that this idea has been thought to apply to teeth.

Dentistry for children came about in a very logical way as the result of discovering the systemic effects in adults of diseased teeth. When an attempt was made to institute preventive measures for these conditions, it was found they did not yield to such treatment after the disease was established. In order to apply "prevention" it became necessary to get back of the diseased tooth—to reach it before the conditions developed which were responsible for the systemic symptoms. This made it necessary to go back to childhood, even to the age of 6 years or under, for very soon after that age cavities begin to develop.

If no cavities are allowed to develop, no large cavity encroaching on the pulp (nerve) of the tooth can occur, and if the pulp is not encroached upon, there cannot be a dead pulp (nerve), and without a dead pulp there cannot be a tooth "focus of infection," affecting other

* Read before the Child Hygiene Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 19, 1927.

† See Present Status of School Hygiene, James Frederick Rogers, *A. J. P. H.*, Jan., 1928, p. 53.

parts of the body, such as joints, heart, kidney, etc. Therefore, from conditions found to exist by recent scientific investigation, taken together with the results of examinations brought to light by the draft reports of tooth conditions, children's dentistry is the only logical conclusion to be deduced for preventive work.

It took about five years to reach the conclusion that the only way to cure a focus of infection in the teeth was to avoid all the conditions leading up to it, that is, at least to avoid cavities of appreciable size; and several more years were required to bring to the attention of the majority of dentists the fact that the only way to avoid a cavity was to begin before the cavity developed—consequently with a young child.

Dentistry had its beginning as a mechanical trade. The advent of the dental school made it a profession, and the constantly expanding curriculum has gradually introduced the broader scientific attitude; but the profession is still largely dominated by the mechanical influence, and even now its work is still curative and reparative in character. Its growth and progress have been remarkable, but it has made no progress in controlling the occurrence of tooth diseases.

The idea of prevention is not so current even today as it should be, and there are many school dental clinics conducted along the old line of cure or repair for older children—which is not doing any particular good from a public health standpoint, but merely attempting to cure a very small number of defects which should have been economically and preventively treated 7 to 10 years previously. Clinics of this sort are usually advocated by dentists who are educated and trained to do only mechanical repair work, as only recently has the teaching of other measures been added to the dental school curriculum. These clinics in rare instances appear to keep almost up with the development of large cavities—so that after a 3- or 5-year period of work, the number of cavities in the younger children is practically the same as at the beginning, despite the fact that a very large number of fillings have been made for the older children. About the same results are obtained when a program of cleaning only, without any actual dentistry, is carried out. The number of children using a toothbrush, and the number of sets of teeth cleaned, sounds like a lot of progressive work, but no cavity is ever arrested in its development, or any defective enamel pit prevented from developing into a cavity by tooth brushing and cleaning, however beneficial it may be for the morale of the child, or assist in preventing some of the gingival (gum) diseases, such as pyorrhea.

The only dental clinic procedure actually giving results in terms of sound, healthy, lasting teeth, is that of early treatment, immediately after the eruption of the tooth, to care for developmental or organic de-

fects in the formation of the enamel by cutting out these defects and placing small fillings. This plan while not reaching to the point of preventing the defect, does accomplish in a very permanent manner the maintenance of sound teeth structure, not only for the time being, but into adult life, because these little "defects" are the cause of about 90 per cent of cavities and fillings later on—if they do not earlier cause the loss of the entire tooth.

This plan may not eventually prove to be the only or even the best method of conserving the dental organs, but so far it is the only one which has given any actual results in terms of good teeth. It is equally effective whether carried out in the Cleveland School Clinics; by the Association for the Improvement of the Conditions of the Poor, New York City; at Bonn, Germany; or at the Forsyth Dental Infirmary in Boston.

The statistics of Professor Kantorowich who has charge of the organization of school dental clinics, at Bonn, and about fifty other German cities are very enlightening. Kantorowich reports as follows:

Final results at the end of the 8th grade in public schools, 93 per cent with healthy permanent teeth; in (private) high schools at the end of the school term, 93.2 per cent with healthy permanent teeth.

At Forsyth, before the plan was fully worked out and adopted, it was possible to save three to four 1st permanent molars in over 90 per cent of the cases—82 per cent with four 1st permanent molars and 11 per cent with three, in a vital condition at the 8th and 9th grade age; and the extraction of similar teeth, in groups beginning early treatment, was reduced from 33 per cent to less than 0.5 per cent. (See following summary.)

RETROGRESSIVE CHECK-UP RECORD OF BOSTON PUBLIC SCHOOL EXAMINATION OF 6TH YEAR MOLARS—JUNE 1925

Forsyth Dental Infirmary For Children, Boston, Mass.

827	4	6-year molars present	=	82.7%
111	3	6-year molars present	=	11.1%
62	2 & 1	6-year molars present	=	6.2%
1000 Cases				100.0%

Cases were begun as I-II-III grades.

Check-up was made on an average of 6 years after work was begun.

243 6-year molars were extracted before beginning record.

Teeth extracted after commencing work for group=Primary 8159 + 40 6-year molars and equals 1 6-year molar in every 200 teeth extracted; or ½% were 6-year molars.

1914—1 6-year molar was extracted in every 3 teeth extracted.
(50% of 6-year molars were given root canal treatment.)

1925—1 6-year molar was extracted in every 200 teeth extracted in special groups which have been consistently brought for early care. (No 6-year molars were given root canal treatment.)

4 6-year molars were saved in 80% of cases.

3 6-year molars were saved in 11% of cases.

The results have been so satisfactory that the Dental Hygiene Council of Massachusetts recommended to the Division of Hygiene of the Massachusetts Department of Public Health, that this plan of early and immediate treatment be the only one to be officially advised to the various communities of the state in their efforts to carry on a program of dental hygiene. This plan provides for an educational and an operative policy. The American Association of Dental Schools has also taken up this work in connection with preschool children and is endeavoring to have coöperative clinical instruction given to both medical and dental students.

DENTAL POLICY—MASSACHUSETTS DEPARTMENT OF PUBLIC HEALTH

Division of Hygiene
Endorsed by: Dental Hygiene Council of Massachusetts.
Massachusetts Dental Society.

A widespread need has developed for a consistent and definite policy regarding dental hygiene. This need has been felt by both official and unofficial agencies, by dentists as well as by health officers. The policy outlined below represents the joint decision of the Massachusetts Department of Public Health and the Dental Hygiene Council of Massachusetts in this matter. By a vote of the Massachusetts Public Health Council it is the dental policy of the Massachusetts Department of Public Health.

1—*Educational Policy:*

The Department will supply communities with information concerning the following subjects:

a. The advantage of beginning dental treatment and nutritional care early, especially of the primary teeth at 2-3 years of age, and the first permanent molar at 6 years of age
b. The relationship of oral health to general health—benefits of a clean mouth
c. The relation of nutrition to teeth development
d. The importance of dental and nutritional care during pregnancy, infancy and early childhood
e. The evidence of desirability of clinic work, and the desirability of employing a dental hygienist
(Facts will be furnished by Dental Hygiene Council.)
f. Information as to the visiting and instructive dental hygiene clinic (Directed by the Dental Hygiene Council of Massachusetts)
g. Cleaning of teeth to be done largely for the benefit of "contact" with the child to create interest in good health habits
h. Stress the importance of periodic inspection (once a year)

2—*Operating Policy:*

a. The staff should consist of dentists and hygienists. (Number depends on size of group served.) The dentist to do fillings and extractions. The dental hygienist to teach dental hygiene, clean, examine for fissures and cavities and follow up in the school. (Follow up in homes to be referred to the public health nurse.)
b. Operating Policy defined:
The recommendations of the department as to policy of dental treatment are identical with that carried out at Forsyth Dental Infirmary for Children.
1. Concentrate on preschool children (age 2-3 years) and follow up through the grades, beginning on the lowest until the problem is under control for all grades.
2. Fill all fissures and pits immediately after eruption. Do no "root canal treatment" or conservative pulp treatment.
3. Extract all teeth not amenable to "simple fillings."
(Fill only such cavities as can be done without danger of pulp involvement.)
4. Do only emergency work for children over 7 years of age.

5. Keep records of all teeth extracted that have been previously filled—in order to check up on work of clinic.
6. Discharge children at 13 years of age or after eruption of 2nd molars.
7. Stress the importance of periodic inspection. (At least once a year—oftener if possible if the child is young.)
8. Carry on clinic only so long as it is necessary to introduce and make more attractive and forceful the educational program, cleaning, fillings of fissures and pits, nutrition and dental care for prenatal period and early childhood.
9. Extend clinic service to prenatal cases.

3—The Department offers to communities:

1. Consulting service of dental hygienist
2. Dental educational material:
   a. Printed Material
   b. Posters
   c. Slides
   d. Exhibits
   e. Moving Pictures
3. Lecture service to selected groups
4. Assistance in state well-child conferences, stressing nutritional side of dental hygiene and importance of early dental care
5. List of dentists approved by Dental Hygiene Council
6. Details and cost of dental clinic equipment that have been compiled by the Dental Hygiene Council

AMERICAN ASSOCIATION OF DENTAL SCHOOLS RESOLUTION

At the last meeting of the American Association of Dental Schools, the following resolution was passed and a committee appointed to carry it out:

WHEREAS, it is desirable that dental services for children of preschool age be generally provided, and that medical and dental students be brought into closer contact and coöperation when receiving instructions with regard to preventive medical and dental treatment of children from birth to school age, therefore be it

RESOLVED, that this association approves of the establishment of preschool age dental clinics in medical and dental schools, health centres and hospitals throughout the world and that a special committee be appointed immediately for the purpose of conducting and coöperating with other organizations in international propaganda for this object.

This same organization, restricting its activities entirely to the dental hygiene phase of dentistry, and made up of representatives of all of the dental societies of the state, has adopted resolutions, the chief features of which are as follows:

WHEREAS, up to the present the attention of dentistry has been centered mainly on the work of restoring lost dental tissue, the only hope of real progress lies, in the prevention or early control of dental diseases. . . .

Prevention, to be effective, must be applied early in the life of the individual—and early in the life of the tooth. . . . That dental service must begin early and be systematic and periodic in order to obtain the maximum of prevention with the minimum of operative work, and to properly educate the child in habits of oral hygiene. . . . . That in the aim to attain prevention of systemic and dental disease—(a) No defect is too slight to receive definite attention. (b) The temporary teeth should receive as much care as the permanent ones, in order to promote the proper development of the jaws and head, and to maintain function. (c) Particular care and attention should be given to developmental pits and fissures, whether occurring in primary or secondary teeth, or whether decay is or is not present. That the Dental Hygiene Council of Massachusetts

declares for the principles and practice of children's dentistry, and maintains that the most effective dentistry that can be done for any individual is the service rendered between the 2nd and 14th years of age.

These principles, in turn, have been adopted by fifteen state societies—the Canadian Dental Society, The VII International Congress, the International Dental Federation and the American Dental Association.

MORE PREVENTIVE EDUCATION NEEDED

In spite of all this interest and publicity, more is needed, for there are still many dentists, just as there are physicians, who do not as yet take much interest in either prevention or such early care, that no treatment of actual disease is involved.

The public, perhaps, is a little in advance of these dentists in their belief in the theory and application of prevention, but they are really further behind than they should be, in what they should know and expect from preventive dentistry or dental hygiene, and much effort will be needed to make this information of practical value.

In the Forsyth Infirmary, all clinical factors of a preventive nature dealing with tooth diseases are carried out to as great an extent as the present status of knowledge permits. Older practices have been given up and new ones adopted as rapidly as some procedure has been found to contain a larger proportion of features of prevention. Prevention is here used in the sense of a real avoidance of a condition or occurrence as it is in medicine, and not the usual dental meaning of merely an improvement in an already established technic or procedure.

The usual and more complicated dental technic is discarded for a very simple type which is all that is needed in caring for the early and simple tooth defects. The lack of complicated technic and the care of extensively and badly broken down cases has frequently been remarked upon, to the exclusion of noticing the continued maintenance of good tooth and systemic conditions, and the avoidance of defects.

In order to accomplish results which are at all preventive in character, it is not only necessary to carry out certain simple technical procedures, but the case must be in a suitable condition to make these procedures possible. This involves chiefly the opportunity to treat the cases *before* conditions have developed beyond a very early stage, and consequently the age of the child is of as much importance as are the clinical procedures. In other words, it is necessary to have both the technic and the time of applying it correlated, in order to obtain the definite advantages which are possible.

The greatest difficulty has been, and is still in getting parents, nurses, physicians, and dentists to appreciate the importance of early attention, so that in any community the age question is more of a problem

than that of clinical procedures, which have been well standardized and put to a successful test.

Large numbers of children, 2 to 3 years of age, are treated to preserve their primary teeth by early treatment of pits and fissures, as it is the aim to fill all cavities within 6 weeks after eruption, whether in primary or secondary teeth. It is not yet possible to do this for the primary teeth to the same extent as is now done for the secondary, on account of the difficulty of getting in touch with children of this age. However, through the baby hygiene and preschool age children's associations, a definite gain is being made each year, although more time probably will be required to place the treatment of primary teeth on a par, in numbers, with that of 6-year molars.

The foregoing plan, while extremely simple and non-technical in character, is giving "end-results" at 16 years of age, in healthy teeth which have had the minimum of dentistry, as early repair work, and the four 1st permanent molars with vital pulps and small fillings are retained. This is a result which technical (orthodox) dentistry has never produced and never can, because it does not aim to prevent, but only to cure and repair.

School dental hygiene is greatly hampered by the lack of preschool work, and many dental defects developing between the ages of 3 and 6 years leave an impression on the child which no amount of school age treatment can undo. It is true that the first permanent or 6-year molar cannot be treated until school age for many children, because it has not erupted, and consequently much of this work must be delayed until school age. However, the primary teeth, in the majority of preschool children are very seriously broken down, and are in as bad a condition as is found in the permanent teeth when uncared for at 10 to 12 years of age.

Inasmuch as under the subject of school hygiene must be considered all of the defects existing at the time of entrance to school life, it appears very logical to include certain preschool hygiene activities which will lead to a reduction of school age defects. This perhaps is not true to any greater extent in dental than in other phases of health defects, but the possibilities of correction in this direction are so great, and the effects both locally and systematically so definite, that such activities cannot be much longer overlooked or neglected.

It has been shown that a large proportion of cervical adenitis and enlarged tonsils are very frequently caused by broken down and abscessed primary teeth, and undoubtedly the first infections, leading later to endocarditis, joint and kidney affections, is often attributable to these serious primary tooth conditions.

Why then, if school hygiene has for its object "to maintain the highest practicable level of health in school pupils," is it not reasonable that school hygiene activity be directed towards the feature (i. e. preschool correction and prevention) which will simplify the correction of school-age defects—whether this be as actual repair work, or along educational lines.

First grade children require approximately ten times as much work to be done on their neglected primary teeth as upon the newly erupted first permanent molars (6th year). This takes school time and school expense to correct from 6 to 15 large cavities in primary teeth, which might have been done in one-tenth the time and expense a year or two previously. Teachers and nurses complain about this loss of time, yet very few make any effort to have this work done earlier. The difficulty of preschool children not being congregated to facilitate group work, is a complication, but one which could easily be overcome, and at a much lower cost than doing the enormous amount of corrective work after they are in school.

There may be some difference of opinion as to whether prenatal work should logically be included in school hygiene, but some time we may act with sufficient coördination in our health activities to have things done where and when it is necessary to produce results, regardless of who or of what department does it.

Most of the defects (at least 85%) of the primary teeth are produced during the prenatal period and as these teeth are fully formed at birth it is evident that the poor teeth of a child of 5 years, is the direct result of poor prenatal conditions. In turn the poor tooth conditions appearing in the child's secondary set is attributable, to a large degree, either directly or indirectly to the poor primary tooth conditions.

Education in dental hygiene, as in all other phases of the school hygiene problem, is undoubtedly more fundamental and more important than the purely corrective features. The results, to be sure, are always slower than a spectacular correction of defects, but will in time lead to a definite decrease in the necessity for the now excessive corrective procedures.

When parents, teachers, nurses, physicians, and dentists know the possibilities which may be achieved by beginning early and following along each step, beginning with the health of the young people before parenthood, and consequently antedating the prenatal, infant and childhood stages, we shall not need to talk so much about correcting defects, not only dental but all others, as a school hygiene proposition.

Up to within 5 to 8 years, the teeth have been treated in a purely mechanical way and almost as though they were a foreign substance

rather than an actual organ of the body. Also their destruction by decay has been believed to be a local process entirely, rather than dependent upon their vital resistance brought about by the state of nutrition existing in the body as a whole. The ideas now generally accepted by the most advanced among the medical and dental professions really place all of the factors, except their actual repair as a medical problem, and on the same basis as defects and deficiencies of other organs to function properly.

The teeth are, however, peculiar in their response to changes in nutrition, the dental tissue being, so far as is known, the first to respond to a disturbance such as a slight deficiency in certain substances. A few days on a deficient diet shows its result in the structure of developing teeth of pigs and monkeys, and this has also been shown to apply to children whose diet has been very carefully supervised and checked by a control group.

GOOD TEETH RESULT FROM ADEQUATE NUTRITION

It is now an established fact that if adequate nutrition can be maintained during the tooth formative period that good teeth without serious defects will result; also that to maintain these teeth in good health there must be a continuance of good nutrition.

Most of the cavities of children's teeth arise, not in an originally perfect tooth, but in defects of development caused by poor nutrition before eruption. These defects of course develop into cavities through the well known processes of fermentation, fostered by secretions from abnormally functioning glands, upset by the lack of certain food essentials, in addition to the fact that the tooth itself does not receive the necessary nutrient material for the blood stream.

With the present knowledge in regard to the causes and control of dental defects, let us hope that the time is near when the people as a whole shall reap the advantages of this knowledge, and a real modern dentistry will come into general application, so that with our highly civilized development and knowledge our children may grow to adult life with sound and lasting teeth, a set "permanent" not only in name, but in reality.

American Social Hygiene Association Report

A BRIEF summary of the achievements of the American Social Hygiene Association for 1927 has been prepared in mimeographed form for distribution. In 5 pages the research work, aid given to municipalities in their civic house cleaning projects, coöperation with national health groups in stimulating scientific work in relation to the social diseases, the educational program and other activities of the A. S. H. A. are interestingly told.

Chemistry and Health*

HARRY W. REDFIELD, PH. D., FELLOW A. P. H. A.

Mendham, N. J.

A PROPER consideration of the subject of the relation of chemistry to health necessitates first that we fix in our minds a number of fundamental facts:

1. Human bodies are the most marvelously intricate and finely balanced examples of masses of chemical substances, actuated and controlled by exactly coördinated chemical reactions, which have ever existed or which ever will exist.

2. Life is the highest and most complex expression of the transformation of matter and of the transformation of energy. Chemistry and physics are the fundamental sciences of the transformation of matter and of energy and are therefore the sciences which must ultimately explain and regulate life.

3. The speed with which the complicated and coördinated chemical and physical changes constituting life take place, is of vital importance. Life, in fact, is dependent on the proper fine adjustment of the time relations of a great many interdependent actions in the body; the rate of the heart beat, the rate of respiration, the rate of metabolism, the rate of digestion, the rate of elimination—all matters of physical chemistry.

4. Furthermore, life is dependent upon the maintainence of stability in the colloidal systems which constitute our organs and tissues, the cells of which these are made and the fluids which bathe them—matters of colloidal chemistry.

In short, every breath we take, every movement we make, is the result of chemical changes within the wonderfully organized communities of cells which constitute our bodies. These chemical reactions are so complicated that we understand them but hazily. They, in turn, induce further chemical reactions which we also do not understand. But this much we do know. It is only when these multitudinous chemical changes, which are going on all the time, some with inconceivable rapidity, some more slowly, are proceeding in an orderly fashion that we are in a state of health. When they are abnormal in character or not properly coördinated, they are a direct cause of disease, as in gout, diabetes, goiter, and autointoxication. When abnormal, they may also be the indirect cause of disease through lowering the natural resistance of the body to invading disease germs, which in turn do their damage through the chemical substances which they produce—the toxins.

How much has chemistry done to determine exactly what are the normal constitutions and reactions of the organs, tissues, cells and fluids

* Address of the Chairman, delivered before the Food and Drugs Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 18, 1927.

in the body? In comparison with what remains to be done, it has accomplished very little.

Chemistry has devoted its chief efforts to bringing back to normal, as far as possible, the course of the life processes after they have been disturbed and upset by some agency. Indeed, the very name—chemistry—refers to the land of Chêmi (Egypt) where the science originated in the temples in which priests experimented with simple chemicals for the preparation of medicinals.

For many centuries the connection between medicine and chemistry was so close that in the 16th century the great physician and chemist, Paracelsus, stated: "the true purpose of chemistry is not to make gold, but to produce medicines." It was Paracelsus, you will remember, who introduced into medicine the use of mercury, lead, sulfur, iron, arsenic, copper sulfate and laudanum. Chemists since that time have devised many medicinals to bring abnormally reacting human bodies back to a state of comparative good health. Their contributions to curative medicine have been far larger than have been their contributions to preventive medicine.

To curative medicine the chemist has brought natural therapeutic agents too numerous to mention. He has gone further and improved on nature in many instances by extracting from natural, impure medicinals the pure principles, such as the alkaloids; he has fabricated previously nonexistent medicinals of great value, such as procaine, arsphenamine and many of the sedatives; he has even prepared the pure principles of some of our organs of secretion, such as epinephrine and thyroxin; he has made much progress toward isolating those vitally important principles of our food, the vitamines, to whose lack is due the deficiency diseases.

Truly the investigators in the fields of chemotherapy and nutrition have done much to aid mankind and to further health. As evidence, however, that this work is nowhere nearly finished, I quote Dr. Charles Herty to the effect that the biggest research task confronting chemistry today lies in the field of human health. What are some of these unsolved problems to which he refers?

LINE OF EFFORT STILL TO BE ATTEMPTED

There is a great opportunity to prepare specific medicants for the scourges of tuberculosis, cancer, endocarditis and a host of other diseases. The number of specifics which we have is pitifully small. There are many vital secretions the isolation of whose pure principles could be undertaken with great profit to health.

Another intensive line of effort should be the attempt to isolate the

pure principles of antitoxins, bacterial vaccines and serums, now so much depended upon as to be styled the Big Berthas of curative medicine. The fluids which are now used, valuable as they are, contain, no doubt, only very small quantities of the pure active principles, mixed with large proportions of inert or even harmful matter, and their use is attended with the serious dangers of anaphylactic shock and other complications. That such purification would result in far better therapy is obvious. The isolation of such specifics should be followed by the exhaustive study of structure, revealing the why and wherefore of action, opening up the way to refinement and improvement. This problem is perhaps the very greatest immediate investigation awaiting the attack of chemo-medical research.

Very little has been done toward solving the fundamental problems of physical and colloidal chemistry to which reference was made earlier; the profound study of our time reactions and their regulators; the study of colloids as the basis of investigation of our organs of secretion. Practically this whole field is open and it is a large and important one.

But the very heart of the problem of life, the highest form of chemical change, lies in the deep and complete study of the chemistry of the body cells. This is the most important and also by far the most difficult problem of all. Its solution is vitally necessary for that complete mastery of science over life, which will give man the wisdom to maintain health and to increase the span of life. Herein lies the greatest opportunity of the chemists of the future. Already the trend is in this direction and the work of curing or preventing disease is tending toward a study of the means by which conditions for normal cell processes may be maintained or restored after any disturbance. The importance of increasing our knowledge of the mechanism of the chemical processes operating in the cells of our bodies wherein all the fundamental reactions of life originate and take place, cannot be overemphasized.

While many definite chemical substances have been isolated from human tissues, the identification of which is a distinct contribution to our knowledge of the body cells, no comprehensive and exhaustive study of the contents of even a single type of cell has ever been attempted. Our knowledge of cells from a strictly chemical point of view is scanty indeed. To those who finally elucidate the problems of chemistry and physics in the ultimate field of cell life will fall the honor and gratification of making the greatest contribution of all in maintaining health, preventing disease, and so lessening the need of curing disease.

I have tried to convey to you what I consider is the gravest responsibility and the greatest opportunity of the Food and Drugs Section in the furtherance of the public health. While I do not decry food and

drug control operations, and while I do not seek to minimize the benefits which health in general has received from such operations, I call your attention to the fact that there are other associations than the A. P. H. A. designed primarily to cover the interests of food, drug and dairy control officials. Furthermore, while I shrink from attempting to formulate a policy for future chairmen of this section, I would like to place before them for consideration the proposition that this section can do its utmost for public health by stimulating such research as I have briefly outlined and by securing for its Annual Meeting programs, as far as possible, the presentation of original research along these lines.

NOTE: To those who would pursue this subject more exhaustively, I commend the little book *The Future Independence and Progress of American Medicine in the Age of Chemistry*, published by the Chemical Foundation Inc. from which I drew quite freely and at times almost verbatim in preparing my remarks.

Zoning Progress In the United States

EDWARD M. BASSETT of the Advisory Committee on City Planning and Zoning of the U. S. Department of Commerce and counsel for the Zoning Committee of New York, discusses under the title of "Zoning in the Courts" recent court cases related to zoning.

In brief, Mr. Bassett points out that the constitutionality of zoning ordinances depends upon the question of whether they are reasonable, impartial and based upon the health, safety, morals and general welfare. When these requirements are complied with and the state in which the laws are enacted have Enabling Acts specifically granting to communities the power to zone, when the zone systems are worked out on a basis of careful study of the community's need and development trends and when a board of appeals or adjustment is established with power to vary the strict letter of the ordinance, the chances of such ordinances being declared constitutional are excellent.

In the report on "Zoning Laws and Ordinances" by the Division of Building and Housing of the Department of Commerce, a list is given of the communities which now have zoning ordinances. More than 30 million people comprising in excess of 55 per cent of the urban population of the United States are protected by zoning.—Edward M. Bassett and by the Division of Building and Housing of the United States Department of Commerce.

The Problem of Decolorization

ESTHER WAGNER STEARN AND ALLEN E. STEARN, PH.D.

University of Missouri, Columbia, Mo.

PROBABLY the greatest lack of uniformity in staining results are met with in such technic as the Gram differential method. While certain organisms can be made to exhibit such a vigorous affinity for basic dye as to be classified always as Gram positive, and certain other organisms exhibit such a weak affinity for the same dye as to be classified always as Gram negative, there is also a large number of "borderline" organisms, the Gram classification of which is somewhat equivocal. It is in the classification of the last type of organism that the characteristics of the decolorizer play an important practical rôle.

For example, the substitution, for the chloroform of Claudius' modification of the Gram technic, of aniline, ethyl alcohol, acetone-alcohol, etc., leads to unreliable results.[1] All of these substances decolorize, but they do not all give corresponding differentiation. Grimme [2] finds that carbolic acid decolorizes carbol fuchsin stained spores (Kugeln) of Pseudomonas species better than alcohol.

In the authors' experience in staining procedure, three factors seem of importance in the choice of a decolorizer. In certain technics one factor is of more importance, and in other technics another.

1. *Solubility of dye in decolorizer*—This factor is generally recognized and is merely enumerated for completeness.

2. *Effect of decolorizing liquid on the pH of the stained tissue*—A basic dye is retained to a much smaller degree in acid than in neutral or alkaline solution.[3]

3. *The acidic or basic character of the decolorizer, aside from its electrolytic strength*—The alcohols, though ionized to such a small extent as to have practically no effect on the pH of the tissue which they bathe, are nevertheless distinctly acidic in character. This is shown, for instance, by the ease with which certain metals such as sodium or potassium will displace their hydroxyl hydrogen, forming the corresponding alcoholates.

To determine the effect of this character on the decolorizing power of liquids, experiments were made on organisms stained with both acid and basic dyes. The results are summarized in Table I.

Fixed smears of *B. coli*, stained either with gentian violet or acid fuchsin, were found to be easily decolorized by acetone in the absence of any mordant. If the gentian violet stained smear was mordanted with weak sodium carbonate solution, the dye was strongly retained, as shown by the failure of acetone to decolorize, while mordanting with

weak acetic acid solution caused retention of acid fuchsin. *B. cereus* behaved in the same manner except that acetone failed to remove the gentian violet even when no mordant was employed. For each decolorizer studied, therefore, two slides of an organism, either *B. coli* or *B. cereus*, or two slides of each in some cases, were prepared. The one slide was stained with gentian violet and mordanted with weak sodium carbonate solution, the other was stained with acid fuchsin and mordanted with weak acetic acid solution. Neither water nor acetone would decolorize any of the smears thus treated.

The decolorizers which are normally liquids were used directly in the commercially obtainable form. For example, the formaldehyde was the 40 per cent solution, the ethyl alcohol was the 95 per cent liquid, etc. In the cases of the easily soluble solids such as urea, acetamide, etc. (marked (S) in the table), a 10 to 15 per cent aqueous solution was employed, while in the cases of the difficultly soluble solids (marked (S') in the table) an aqueous solution saturated at 50°C. was employed. It was determined that pure water at this higher temperature did not decolorize the smears which were being thus treated.

The general behavior of the various decolorizers seems to be brought out fairly well in the table. Acidic substances apparently tend to decolorize gentian violet stained organisms without affecting the fuchsin stained ones appreciably, while the reverse is true for the basic substances. Although the results may be partly explained on the basis of the established pH effect on the stability of the dye-protein compound which is probably formed during the staining,[7] it seems highly improbable, especially in the cases of the non-aqueous unbuffered liquids, which, however, show the same behavior as the aqueous solutions, that the selective decolorization is entirely due to a shift in pH. Also, while the relative solubilities of the dyes are different in the different liquids, this fact cannot account for their behavior. In many of the liquids the two dyes studied seem almost equally soluble, and in some cases, notably that of the solution of phthalimide, it was noted that the acid fuchsin was dissolved from the slide much more easily and much more completely than was the gentian violet. In fact it was almost impossible to remove the dye completely from the slide itself. Nevertheless the gentian violet stained organisms were decolorized, whereas those stained with the acid fuchsin retained the stain.

The authors have explained these results to themselves, in accordance with the postulated equilibria obtaining in such systems,[8] as partly due to mass action effects. Thus in the one case the acidic substances are competing with the acidic bacterial protein, i.e., protein brought to the alkaline side of its isoelectric point by treatment with sodium

TABLE I

DECOLORIZER	IONIZATION CONST. (Approx)	DECOLORIZING EFFECT ON B. COLI G. V.	B. COLI FUCHSIN	B. CEREUS G. V.	B. CEREUS FUCHSIN
ACIDIC					
Phenol	10^{-10}	+	—	+	—
m-cresol	2×10^{-5}	+	—	+	—
Phthalimide (S')	5×10^{-9}	+	—	..	..
Methyl alcohol	....	+	—+	—+	—+
Ethyl alcohol	....	+	—	..	..
N.propyl alcohol	....	+	—	..	..
N.butyl alcohol	....	+	—	..	..
N.octyl alcohol	....	..	—	—	—
Benzyl alcohol	....	+	—	..	..
Formaldehyde	2×10^{-14}	+	—	+	—
Acetaldehyde	5×10^{-13}	+	—	..	..
Paraldehyde	....	+	—	+	—
Acetoacetic acid (ethyl ester)	2×10^{-11}	+	—	..	..
BASIC					
Urea (S)	10^{-14}	—	+	—	+
Pyridine	10^{-9}	—	+	—	+
Aniline	4×10^{-10}	—	+	—	+—
Quinoline	10^{-9}	..	..	—	+—
Benzamide (S')	....	—	+	..	..
p-nitroaniline (S')	10^{-12}	—	+	..	..
L'Naphthylamine (S')	3×10^{-10}	—	+	..	..
Caffeine (S')	$<10^{-10}$	—+	+—	..	..
Acetamide (S)	3×10^{-13}	—+	+	..	..
Dimethylaniline (crude)	2×10^{-10}	—	+—	..	..
AMPHOTERIC OR MIXED					
Glycine (S)		—+	+	—	—+
Alpha-alanine (S)		—	+	—	+—
Urea-formalin		+	+	+	+
Urea-acetone-water		+	+	..	..
NON-POLAR. (?)					
Acetophenone		—+	—	..	..
Carbon tetrachloride		—	—+	..	..
Ether		—	—	..	..
ACETONE		—	—	—	—

The ionization constants are taken from Scudder. [4] (S) denotes a 10 to 15% aqueous solution; (S') denotes an aqueous solution saturated at 50°C. (—) denotes no appreciable decolorization; (— +) denotes only slight decolorizing effect; (+ —) denotes slight retention of dye while (+) denotes complete decolorization.

carbonate solution, for the basic dye, gentian violet. The preponderant mass effect of the decolorizer over the protein results in comparatively easy decolorization, since the ionization constants of the protein are probably small and of an order of magnitude not significantly greater than those of the decolorizers. In the case of the fuchsin stained tissue we have basic protein, brought to the acid side of its isoelectric point by the acetic acid treatment, retaining the acid dye. Under such conditions there would be no chemical mass effect of the decolorizer, and decolorization would have to depend on the solubility distribution of uncombined dye. Naturally the removal of all uncombined dye by decolorizer would be expected to lead to a certain amount of dissociation of the dye-protein complex, and under any circumstances long continued treatment with any decolorizer will effect removal of stain. Differential decolorization is entirely a matter of relative velocities, and thus in the above work the slides were decolorized until the decolorizer appeared free from stain.

With basic decolorizing agents the reverse conditions hold, and we find the fuchsin stained organisms easily and completely decolorized while the gentian violet is retained.

Even with different acidic substances there is a distinct difference in the speed of decolorization. This has been rather strikingly shown by Kisskalt[8] in a series of tests on 39 organisms. The decolorizing power of the lower alcohols was studied, and he found that, with the exception of the vibrios and the fluorescent bacteria, practically all bacteria retain gentian violet if amyl alcohol is used as decolorizer. Butyl alcohol decolorizes more strains than amyl, propyl more than butyl, ethyl more than propyl, while methyl shows the widest decolorizing power.

The results in Table I bring out to a certain degree the same fact. When the jump is made from butyl to octyl alcohol all decolorizing effect seems to have been lost. This order is exactly what would have been predicted on the basis of the above explanation, both from the relative molecular concentrations, which decrease with increasing molecular weight, and also from the probable order of acidic strength, which one would expect to decrease with increasing molecular weight, the heavier hydrocarbon groups having more and more masking effect on the polar properties of the hydroxyl group.

Strictly speaking, caffeine should be classed as amphoteric, but its basic ionization constant is so much larger than its acid ionization constant,[9] as compared to glycine and alanine, that it is placed with the basic substances. The differential effect is in the same direction as that of the other bases but is by no means so marked.

Glycine and alanine are amphoteric and highly buffered, and it is possible that their effect is largely due to bringing the smears to their isoelectric points, both of which are at a pH of about 6. Either basic or acidic ion is then available for any mass effect. Such a pH is within the isoelectric range of *B. Coli,*[7] though from the pH effect on the retaining power respectively of gentian violet and acid fuchsin as shown by the authors,[7] the slightly more rapid decolorization of the fuchsin stained smear, as observed, was to be expected. In the case of *B. cereus,* gentian violet is more strongly retained at a pH of 6, which is on the alkaline side of its isoelectric range.

The urea-formalin mixture behaved as expected. When urea is mixed with acetone and a little water is added one would not necessarily predict, from the general behavior, as shown in the table, that the gentian violet stained smear would be decolorized. It is possible that the presence of the urea and water cause a shift to a higher concentration of the enolic acidic form of acetone and that the effect is so produced.

The authors have found that, unless there should be some special reason for the choice, for instance, of a basic decolorizer, as for example for the purpose of obtaining sharp differentiation between a strongly Gram positive and a weakly Gram negative organism, acetone furnishes the most nearly generally applicable decolorizer. While the enolic form of acetone is no doubt acidic in character, as evidenced by the liberation of hydrogen upon treatment with sodium, this form does not seem to be present in the ordinary pure liquid to an appreciable extent, and we have probably a substance which is neither sensibly acidic nor basic. Thus two of the above three factors tend to be eliminated by its use. It is also a decolorizer in which most dyes are sufficiently soluble for effective removal. Such is not the case with either ether or carbon tetrachloride, in which liquids both gentian violet and acid fuchsin are only extremely slowly soluble if they are dissolved at all.

In differential staining methods it is obvious that the dominant factor in the results (and ideally the only factor) should be differential retaining power of the organism for the stain, or if we accept the chemical point of view, the stability of the dye-protein compound. It must be borne in mind that all of the smears prepared for decolorization in this work were prepared under such conditions that the dye-protein compound was, from the point of view of differential staining methods, stable.[8] The ideal decolorizer, then, should show this to be the case, but should likewise effectively decolorize smears where such compounds are not stable. Among the common decolorizers acetone seems to come nearer fulfilling these requisites than any other substance tried.

In agreement with the general experience of the authors, Stitt[8] makes the statement that, as a decolorizer, "acetone is preferred by many due to the fact that it is more rapid in its decolorizing action on Gram negative organisms, yet slower to decolorize positive organisms."

REFERENCES

1. Eisenberg, Ph. Studien zur Ektoplasmatheorie II *Centralbl. f. Bakteriol.*, 49, Abt. 1, Orig. 465, 1909.

2. Grimme, A. Die Wichtigsten Methoden der Bakterienfarbung, etc. *Centralbl. f. Bakteriol.*, 32, Abt. 1, 161, 1902.

3. Stearn, E. W. and Stearn, A. E. The Chemical Mechanism of Bacterial Behavior I. Factors Controlling the Gram Reaction—*J. Bact.*, 9:463, 1924.

4. Scudder, H. Electrical Conductivity and Ionization Constants of Organic Compounds—Van Nostrand. 1914.

5. Stearn, A. E. and Stearn, E. W. The Chemical Mechanism of Bacterial Behavior III The Problem of Bacteriostasis—*J. Bact.*, 9:491, 1924; Conditions and Reactions Defining Dye Bacteriostasis—*ibid.*, 11; 345, 1926.

6. Kisskalt, C. Eine Modifikation der Gramschen Färbung. *Centralbl. f. Bakteriol.*, 30, Abt. 1, 281, 1901.

7. Stearn, E. W. and Stearn, A. E. The Chemical Differentiation of Bacteria—*J. Bact.*, 10, 13, 1925.

8. Stitt, E. R. *Practical Bacteriology, Blood Work and Animal Parasitology*. Ed. VII, p. 57. P. Blakiston, 1923.

Health Group to Meet

THE Third New York Health Conference will be held at Hotel Roosevelt, New York, N. Y., February 23-24. The meeting is being arranged under the following official and voluntary agencies:

U. S. Public Health Service
New York State Department of Health
New York City Department of Health
New York State Medical Society
Milbank Memorial Fund
Bellevue-Yorkville Community Health Council
State Charities Aid Association

At this time the State Committee on Tuberculosis and Public Health of the State Charities Aid Association will hold its semi-annual meeting.

The Advisory Council of the Milbank Memorial Fund will also meet to review the work being accomplished in the health demonstrations in Cattaraugus County, Syracuse and the Bellevue-Yorkville district in New York City.

Committee on Administrative Practice*

THE COMMITTEE on Administrative Practice was reorganized and placed on a permanent basis at the Buffalo meeting of a year ago. It is now composed of 12 members appointed by the President of the American Public Health Association to serve for 4-year terms, in overlapping groups, so that 3 members are appointed each year; plus the Executive Secretary of the Association and the 3 officers of the Health Officers section as *ex officio* members, 16 members in all.

The committee, as its work has developed during the past 5 years (with its Field Staff), has come to constitute essentially the technical service division of the A. P. H. A. organization. It appears to have at the moment 3 essential and primary functions. These are:

A. The collection of material in regard to existing health department practice by surveys and questionnaires

B. The critical analysis of the data thus obtained and the formulation of the results of such analysis in the shape of model forms and programs

C. The making available, to individual communities, of the results of procedures A and B by operating an information service and by making on request more or less detailed local surveys and appraisals

A fourth function, that of organized publicity to further the improvement of health department practice by the wider use of the technical machinery now available, has been more or less forced upon the committee; but much of this work will now be shifted to the recently organized Promotion Division of the A. P. H. A. office.

We may conveniently review the work of the past year and the plans for next year under the headings just outlined, although the first two functions, the collection of data and the development from them of model forms and programs, must necessarily be considered together since they are intimately interlocked.

The most important single task, upon which the committee is now engaged is the revision of the *Appraisal Form for City Health Work* under a sub-committee of which G. T. Palmer, Dr. P. H., is chairman. This *Appraisal Form*, which was placed in your hands in January 1926, has exhibited a usefulness beyond our highest expectations. It has been said, and, we believe, with some justice, that no single factor has ever done more than has the use of this *Appraisal Form* to develop city health department practice in the United States; and it has been used to some extent even in foreign countries.

* Report of the Committee, presented to the Health Officers Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 19, 1927.

However, the committee has felt from the beginning that there were two very real dangers in the practical application of the appraisal principle. It might, on the one hand, invite unjustified and damaging criticism of departments having low scores; and it might, on the other, lead to undue standardization and to stagnation on the part of cities having high scores. The first of these hazards has, so far as we are aware, been completely avoided by the use of the *Appraisal Form* in an individual city only with the approval and on the request of the health officer and by the avoidance of any comparison of total scores obtained by various cities on a comparative basis. The second hazard, we have planned to obviate by revision of the *Appraisal Form* at 3-year intervals, and the first revision will be completed during the coming year and presented at the 1928 Annual Meeting. It is planned, not only to alter items in the present form which have been shown to be theoretically and practically unsound, and to increase levels of attainment required for a perfect score to keep pace with current progress; but also, if possible to include certain new items not now included at all. Individuals and organizations interested in mental hygiene and in industrial hygiene, and in the control of heart disease, cancer and malaria, will be asked to submit for their respective fields model administrative programs with appropriate numerical ratings of various activities on an objective basis; and if it proves that such programs and ratings can be prepared they will be included in the 1929 revision.

RURAL COMMUNITIES

A second project, of major importance, is the attempt to extend the appraisal principle to cover the health machinery of rural counties. The sub-committee on this project, under E. L. Bishop, M. D., has prepared during the year a tentative *Appraisal Form for Rural Health Work*. This form was published some time ago and has already been extensively tested out in practice by the committee in Tennessee and to some extent in the states of New York, and Georgia. County or district health officers from 15 states have written to us for 402 copies of these forms, and up to October 1, 1927, 652 copies in all had been distributed. This tentative form will be continued in experimental use till 1929.

In order to proceed soundly with the preparation of programs for rural health work, it seems to us essential that we should have the same broad basis of knowledge which was obtained for city health services in the comprehensive surveys of 1920 and 1923. Dr. Bishop has therefore prepared a definite program for a 2-year study in which 50 typical counties should be surveyed, covering all sections of the country and all

degrees of public health development. He presented this program at the Surgeon-General's Annual Conference of State and Territorial Health Officers last spring. The matter was referred to a committee of the conference on Standard Forms for Reporting County Health Work, S. W. Welch, M. D., chairman. Dr. Bishop's committee and Dr. Welch's committee are now working on the problem with every prospect of hearty agreement. It will be necessary, however, to obtain special funds to the extent of $25,000 if this work is to be undertaken.

UNIFORMITY OF PRACTICE

In addition to the *Appraisal Forms* which cover in a general way the whole balanced program of community health service, your committee has proceeded actively during the year with the study of certain details of health department procedure which seemed to lend themselves to analysis in the direction of uniformity of practice. Thus, a Sub-committee on Record Forms, with G. C. Ruhland, M. D., as chairman, has rendered a notable service during the year in the preparation, after a vast amount of correspondence and critical study, of sets of model forms to be used in connection with the communicable disease service, the laboratory service, the school medical inspection, and the nursing service of the health department. These 4 sets of forms constitute the second definite evidence of work completed by the committee during 1927. Dr. Ruhland's sub-committee is now proceeding with the preparation of similar forms for use in connection with tuberculosis and venereal disease.

The Sub-committee on Model Health Department Reports, C. Hampson Jones, M. D., chairman, has prepared a preliminary analysis of the functions and contents of a model annual report,[1] a third concrete result of our sub-committee activities presented at this convention. Topical outlines for the various sections of the annual report will be worked out in detail during the coming year.

The Sub-committee on Model Ordinances, H. F. Vaughan, D. P. H., chairman, is at work on a schedule of the main essentials which should be the objectives of a health code, and its final report is promised by the spring of 1928.

An important special problem, that of the relation between the health department and the local hospitals has been considered by a sub-committee, of which Michael M. Davis, Ph. D., is chairman, and his very interesting report giving the results of a questionnaire sent out to 247 health departments and to 1365 hospitals and dispensaries, and supplemented by field visits by our staff, presented at this meeting, will be published later.

The problem of the hospital and the clinic has been forced upon the attention of your committee, not only as coöperating agencies in the primary activities of the health department but, as themselves, in their very essence a part of the machinery for community health programs. We have been called on during the year to make special surveys of the hospital situation in St. Louis and Scranton and have undertaken a study of the dispensary situation in Cincinnati. In order to meet future demands of this kind the scope of Dr. Davis's sub-committee has been enlarged and its title changed to Sub-committee on the Organized Care of the Sick. It has been asked to prepare a suitable survey schedule for the study of hospital and dispensary service and to supervise the field service of the committee in this important field. The work projected will continue to be carried on, as it has been during the past year, in close coöperation with the officers of the American Hospital Association and the function of the sub-committee is limited to the study of hospital and dispensary service in regard to community needs and relationships and will not include details of the construction or operation of such institutions.

Mention should be made of one other sub-committee, that on Analysis of Public Health Procedures, Prof. A. W. Freeman, chairman, which has not been active during the past year but from which we hope much in the future. It is the function of this sub-committee to attempt, step by step, the analysis of the demonstrated values of various community health activities in terms of actual life saving—a problem of enormous difficulty but the solution of which will alone give us the ultimately sound basis for the standards and the appraisals now necessarily grounded in the main on group judgment and empirical experience.

A special sub-committee, with Haven Emerson, M. D., as chairman, was appointed as a result of action taken by the American Public Health Association at Buffalo to present to the American Medical Association the invitation to create a joint standing committee of conference between the two organizations on the inter-relationships between the public health movement and the medical profession. Conferences on the plan have not yet proceeded far enough to require any further official action. Your committee desires, however, to express its feeling that if the American Public Health Association does take part in any such permanent conference committee it should do so through a special committee named by the President of the Association for the purpose and not through the Committee on Administrative Practice.

We may now proceed to a consideration of the third primary function of the committee, the translation of its general program into concrete action through local surveys and appraisals. It is this work which

of course occupies the major share of the time of our very able staff, including Dr. Walker, Dr. Drake and Miss Phillips. During the past year we have made more or less complete surveys and appraisals in Athens and in Clarke County, Ga., Burbank, Calif., Cattaraugus County, N. Y., Chicago, Ill., Cincinnati, O., Fargo, N. Dak., Glendale, Calif., Hingham, Mass., Lowell, Mass., Quincy, Mass., Rutherford County, Tenn., Salem, Ore., Scranton, Pa., St. Louis, Mo., and Syracuse, N. Y., while more or less definite approaches have been made by 11 cities and counties in 7 states and 1 province in Canada for surveys to be conducted in the near future.

We have been invited by the State Health Departments of Michigan and Ohio to undertake studies of their organization and administration, an opportunity which we shall welcome if the necessary funds for this purpose can be obtained.

In the fourth field of activity, that of propaganda for the advancement of the general cause of improved community health services, the committee has opened up during the year two very important possibilities of coöperative effort. The active interest of the U. S. Chamber of Commerce has been enlisted in this cause and three most helpful bulletins have been prepared in the Executive Office on *Prolonging Life by Cooperative Effort, Health and Community Prosperity,* and *The Health of the Business Man,* which have been printed by the Chamber and distributed to local chamber of commerce secretaries and to health officers throughout the country. Dr. Walker was also invited under the auspices of the Chamber to deliver a series of lectures on public health before the National School for Commercial and Trade Organization Executives. We believe that local health officers will find the movement thus actively fostered by the U. S. Chamber of Commerce of incalculable value to them in the future.

In conjunction with the American Child Health Association, continued coöperation has also been maintained with the General Federation of Women's Clubs in stimulating a health interest on the part of its constituent organizations.

A schedule of community health study was prepared and 3328 copies distributed to the local clubs, of which 93 schedules were actually filled out by clubs from 13 states. One month's free service was promised by the Committee on Administrative Practice as well as by the American Child Health Association to the state showing the largest proportion of communities participating, and this friendly competition was won by the State of Rhode Island.

The *Health Officers' News Letter* is issued monthly from the office of the committee and is now sent to all state health officers, to health

officers of cities having a population of over 30,000, and to all full-time county health officers.

BUDGET OF THE COMMITTEE

The total budget of the committee for the calendar year is estimated at $42,000, balanced by an income of about $19,000 from special grants and general retainers, and $21,000 from payment for surveys and appraisals, leaving a $2000 estimated deficit to be made up by the Association. For 1928 we look forward to a basic budget of $48,000, with $18,000 more needed if the state and rural surveys are to be undertaken.

The budget of the committee can conveniently be considered under 3 main heads. It includes first of all appraisals and surveys of local communities, which are normally self-supporting. Of the 15 city and country surveys in 1927, 14 were paid for—5 from municipal funds, 3 from funds of local voluntary agencies and 6 from funds of outside voluntary agencies interested in the local health work. This part of our budget takes care of itself and is likely soon to amount to about $30,000 a year.

Special studies like the rural health survey and the state health survey must obviously be supported by special gifts and will only be undertaken if those gifts are forthcoming.

Finally, there is a basic and essential general service cost of the work of the committee which is and ought to be considerable. All the preliminary work of accumulating data for the various sub-committees, the preparation and revision of *Appraisal Forms,* the preparation of the *News Letter,* the conduct of the Information Service, the aid which must necessarily be furnished very frequently to health officers unable to pay for it—all these things involve a large part of the time of the staff and considerable expenditure for travelling, postage and printing which bring in no direct financial return. We have been able to carry this basic service cost during the past year through a grant of $10,000 from the Metropolitan Life Insurance Company, a grant of $7500 from the Milbank Fund, a retaining fee for consultation service of $1000 from the Commonwealth Fund and a similar retaining fee of $400 from the Department of Health of the City of Detroit. The indefinite continuation of grants from outside agencies is most unlikely and even with those now available the powers of the present field staff have been strained far beyond a wise and profitable limit. Dr. Walker has rendered to this committee a service of a rare and unusual character and his usefulness grows with the experience of every year. It would be the poorest policy to break down his health or let him slip out of our

hands to some more appreciative organization. We must give him additional assistance, which will require more money, not less.

There seem only 3 ways to finance this general service cost of the committee on a permanent basis: by grants from outside agencies, by grants from the Association, or by contributions from local health departments. Outside grants cannot be relied upon for an indefinite period and Association grants of large size are at present beyond our financial resources. It is really the health departments of the country which profit most directly and most immediately by the work of the committee. The logical source of support would seem to be contributions from these departments just as the source of support for the National Safety Council, which renders to the manufacturing industries a similar service, is found in the contributions of those same industries. If more cities would follow the example of Detroit and place in their annual budgets an item of $100 to $500 for consultant service from the Committee on Administrative Practice, our financial problem would be solved in the one really satisfactory way.

C.-E. A. WINSLOW, *Chairman*
HAVEN EMERSON, *Vice-Chairman*
LOUIS I. DUBLIN, *Secretary*
E. L. BISHOP
HOMER N. CALVER
F. G. CURTIS
MICHAEL M. DAVIS
W. F. DRAPER
A. W. FREEMAN
C. HAMPSON JONES
G. D. LUMMIS
G. T. PALMER
W. S. RANKIN
JAMES L. ROBERTS
G. C. RUHLAND
HENRY F. VAUGHAN

REFERENCE

1. Hiscock, Ira V. and Jones, C. Hampson. The Preparation of Annual Health Reports, *A. J. P. H.*, 17, 11:1152 (Nov.), 1927.

Babies' Hospital at New York Medical Center

CONSTRUCTION of the Babies' Hospital of the City of New York as one of the units of the Medical Center at 168th St. and Broadway has been begun. This is the eleventh unit to begin construction at the Medical Center since ground was first broken January 31, 1925. The Babies' Hospital will be a 12 story building occupying the site at 167th St. and Broadway. The plant based on the results of a study of babies' hospitals throughout the county will cost about one and a half million dollars, including building and equipment.

Joint Causes of Death*

ANY thorough study of causes of death certified by physicians upon death certificates brings one almost immediately to a consideration of two more causes of death certified for a single decedent. How should joint causes of death be treated?

Assuming for the moment that each death must be assigned to a single cause, how shall these single causes be selected? For several decades it has been customary in most countries to make these selections in accordance with sets of rules—rules not exactly the same in the several countries, but still rules more or less alike—so that the general tendency of such selection has been toward comparable vital statistics.

Regarding joint causes of death it should be pointed out that there are two goals to be kept in mind:

1. Accurate statistics for the United States
2. Accurate statistics for the United States comparable with accurate statistics for other countries

It is not hard to realize that the first goal might be attained, and yet the second goal might be still far away, if the various countries did not compile statistics in accordance with uniform rules of selection. To accomplish anything lasting toward international agreement in the selection of single causes from groups of two or more, representatives of the various countries must actually be convinced by arguments that each selection agreed to is the only proper selection. It will not be sufficient to obtain simply a vote of agreement, for unless the agreement is based on logical facts and definitely stated reasons, the agreement will not be lasting but will probably be superseded shortly by the first clear presentation of the facts of pathology, or clinical medicine, or public health importance. It might be well, therefore, to state a general principle for our guidance in working out this complex international problem:

1. We recognize that it is improbable that the nations will reach complete agreement in thought upon all points related to the reporting and classification and tabulation of births and deaths; and that without agreement in thought, action taken on the basis of a forced decision by a majority vote would retard rather than promote international accord in these matters.

Therefore our objects should be to attain by discussion as much agreement in

* Report of the committee, presented to the Vital Statistics Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 17, 1927.

thought as possible, and, when such agreement in thought is not reached, to devise methods or procedures which will permit of the greatest degree of comparability in international vital statistics without doing violence to the convictions of the representatives of the various countries.

In the Bureau of the Census *Manual of the International List of Causes of Death* there are about 8,300 terms which have been used upon death certificates. Assuming that each term may be combined with every other, there are possible about 34 million combinations. Perhaps it would be more reasonable to assume that only one-half of the terms might enter into such combinations. In that case there would be possible about 8,600,000 combinations. To print even this smaller number would require 61 volumes of 1,000 pages each. The magnitude of such a work would be so stupendous that there is little wonder that in the second edition of the *Manual of Joint Causes of Death* (1925) an attempt was made to find a reasonably correct solution by grouping the terms, assuming that all terms in a group had equal weight. It is not claimed that this second edition should be regarded as the last word; many more subdivisions of titles are undoubtedly needed and many readjustments of terms under the various subdivisions; but it is hoped and believed that such changes will lead eventually to a manual of joint causes good enough for the careful compilation of mortality statistics to a degree of reasonable accuracy. It is too much to expect other countries to agree entirely to the selections made for these millions of combinations of causes. The most that we can possibly hope for is that other countries will give careful consideration to our joint cause manual and will publish similar manuals of their own. If such a course is generally followed an excellent start will have been made toward international discussions and toward international agreement.

In the meantime there exists a practical method of making the mortality statistics of the various countries much more comparable than at present. If each country would publish a contributory cause table, such as the Census Bureau did in 1918 and now has in press for 1925, it would be possible to see how joint causes of death are treated in each country and so to work out reasonably approximate figures for international comparison.

It seems to your committee, therefore, that the Vital Statistics Section ought to indorse strongly the following recommendations:

1. That each country publish manuals of causes of death similar to those already published by England and Wales and by the United States.

2. That each country publish a manual of joint causes of death to show how this problem is taken care of in each country.

3. That each country publish contributory cause tables showing the relation of the contributory causes to the principal causes of death.

Eventually, of course, it is to be hoped that the various countries will be able to agree in the main in the selection of single causes from groups of causes, but such a day is far in the future and we believe that more progress can be made toward comparability now, by emphasizing the value of contributory cause tables than by stressing the immediate need of uniform rules of selecting single causes.

The following lines recently received from Malcolm Fraser, Government Statistician of New Zealand, are very encouraging:

> The copy of your *Manual of Joint Causes of Death,* which you so kindly sent me about two years ago, has proved of the greatest service in connection with the classification and tabulation of causes of death, and you will be interested to learn that we have adopted it in its entirety.

WILLIAM H. DAVIS, *Chairman*
WILMER R. BATT
GEORGE H. VAN BUREN
WILLIAM H. GUILFOY
JOHN O. SPAIN

Revision of the Appraisal Form for City Health Work

WHEN the Committee on Administrative Practice approved the *Appraisal Form for City Health Work* in 1925, it also committed itself to continued study and periodic revision of the Form with the date of the first revision set for 1929. The sub-committee charged with the revision has already received many valuable suggestions which have been useful in its meetings. However, what the Committee needs now is specific information regarding the application of the existing appraisal form standards to local situations.

Requests have been made to health officers through the *News Letter* to apply the *Appraisal Form* to their particular communities and make this material available for committee guidance. Health officers, so reporting are participating directly in the establishment of standards of service. When he points out those items in which the standards are at considerable variance, the health officer renders a valuable service to the committee, as this information can only be obtained by the study of local conditions, such as was furnished in 1924 by a general survey of all cities.

Workers in other fields will also render assistance by furnishing specific information on standards and values, based upon actual experience and application of the *Appraisal Form.* The committee suggests that those engaged in administrative health work in cities apply the *Appraisal Form* to their local problems and advise the committee of the results.

Who Shall Teach Hygiene in College*

JESSE FEIRING WILLIAMS, M.D.

Teachers College, Columbia University, New York City, N. Y.

SINCE the close of the World War there has been a tremendous interest in health. The teaching of health in school and college has grown rapidly. The spur for this heightened interest has been the reported defects of drafted men, the malnutrition of European children, and the surveys of school children in the United States. This interest, expressed in the organization of departments of health education in schools and colleges, often supplants in the newer terminology that work carried on under the older title of hygiene.

Before this recent development of interest in health, most of the teaching of hygiene was conducted by departments of physical education. In some instances where a doctor of medicine was the head of the department, the hygiene was under medical direction, but often it was taught by those whose training was without any medical background.

This teaching of hygiene by experts in physical education has been varied in its worth. There are some samples of excellent college teaching of hygiene by this group; there are others that are totally incompetent and unsatisfactory.

A recent article in the Nation's Health argued that "physical directors are trained to teach exercises and games (and rightly so!) and not to teach preventive medicine or hygiene." The same article further contended that "a thorough biological background and a medical education with special reference to bacteriology and preventive medicine are absolutely essential for the well equipped instructor in hygiene."

Other things being equal, and due correction being made for the emphasis on pathology in the training of physicians, I believe it to be a fair assumption that a man trained in medicine *may* be a better teacher of hygiene than one trained only in physical education. In the long run, however, it is unwise to assume that there will be more successful teaching of hygiene by the former than by the latter. Such assumption leads to positive statements which err grossly in the light of the facts. There are quite as serious hazards when hygiene is taught by a

* This article was written by Dr. Williams in reply to the article, "Is Physical Education Related to Preventive Medicine?" by J. E. Rush, M.D., which was published in *The Nation's Health*, IX, 10:21 (Oct.), 1927.

physician as those presented when it is taught by the physical educator. This may not be apparent to some people because of their lack of information and perspective. One who knows physical education so inadequately that he confuses it with "physical culture" and is so unacquainted with the modern training given to specialists in physical education that he describes their training as consisting of "briefer courses in anatomy and physiology . . . . the only subjects in the curriculum that could in any way be interpreted as having a bearing on hygiene," is hardly competent to judge of the relation that physical education bears to the subject of hygiene.

Graduate students who major in physical education in several universities have had courses in biology, physics, chemistry, physiology, anatomy, personal hygiene, educational hygiene, community hygiene, and some have had related courses in anthropology, bacteriology, eugenics, heredity, health examinations, and nutrition.

It is not too much to say that while the physical educator (not physical director) may not have all he requires as a needed background for the best teaching of health, it should also be noted that the physician lacks tremendously in his training. The average medical student gets about the same training in personal hygiene that theological students receive, and this according to a recent study by Storey amounts to what the chemists would call a "trace." The chief criticism of hygiene as taught by the usual physician is that it is academic. Here is a subject that deals essentially with problems of living: to select food properly, to use the body correctly, the rôle of work and rest in bodily activity, sleep, the present facts regarding prevention of disease, measures for developing immunity, personal problems in social adjustment, marriage and race problems, etc., etc. It is exceedingly ambitious for medical men to assume that they have a corner on such information.

One difficulty develops because medical men who have specialized in preventive medicine know so much of the subject that, like all teachers, they tend to develop the subject far beyond its usefulness. A student may learn to shoot a gun accurately without any of the theory involved in the chemistry of explosives or the tabulations of ballistics; indeed, one may become quite skillful in taking pictures and know very little about the science of optics. In like fashion, a student interested in living finely and well may learn how to meet his varied health problems without any lengthy discourse on Theobald Smith's formula on resistance or methods for correcting the crude rate in tabulation of vital statistics. Physicians with limited hygiene training are often of the opinion that prevention of disease should be the cardinal point in health courses. This is unproven. Indeed one study made shows that

students need and are interested in mental hygiene problems, adjustment to modern society, reproduction and mate seeking, physical activity, and nutritional problems. None of these is directly related to prevention of disease. The trouble with many teachers of "preventive medicine" is the academic character of what they teach. It is not a valid assumption that knowledge about disease is of any value *per se* in keeping people well. To say that the purpose of hygiene teaching is "to control sickness and lengthen the useful span of life" is to state a very narrow view. The purpose of hygiene teaching is to help people *to live at their best*. Moreover, ethics, decency and social relationships, comprise related aspects.

If medical men alone are to teach hygiene in colleges, we shall probably have as many errors in advice on how to live as we have now. We shall learn from the experts in preventive medicine who have "a thorough biological background" that development of the skeletal muscles does not strengthen the muscles of the visceral organs; we shall learn that there is an "athletic heart" in spite of McKenzie's work and the experience of expert cardiologists; and we shall learn that "athletic heart" is due to "inheritance or previous disease, or both."

It would appear from some observations and experience that the important factors, granted some acceptable training, to consider in selecting the teacher of hygiene are personal qualifications. The desirable qualities in a teacher of hygiene may be briefly stated in the following divisions:

1. He shall be scientific. Clearly he must not be a faddist. Belief in the efficacy of exercise as a prevention or cure for all things is as unsound as any similar proposal of sorcerer or magician. The faddist in preventive medicine today is subject to the same criticism.

2. He shall not be academically minded. Personal hygiene is a practical matter. The development of knowledge about health is to be evaluated in terms of its practical application. The Goddess Hygeia is a stern goddess.

3. He shall not be a formalist. The learning of mankind has an extended past. Ways of living and methods of procedure have been developed and have attained a certain rigidity of form. But learning how to live *may* be best taught not by traditional methods but by new and untried devices. Reliance upon formal means of education *may* be unwarranted. Experimental attitude, elasticity, and open-mindedness of spirit are very desirable.

Moreover, these qualities are essential if the doctor of medicine is to learn anything about health teaching. Nothing in his medical course prepares him adequately to act as teacher of personal hygiene. The work of teaching today has a technic and a method. It is not sufficient to assume that knowledge of certain material is the *sine qua non* for successful teaching. The operations of the mind in learning, the laws

of learning, the methods to insure greatest retention are not learned in medical schools. Because a physician deems a subject important is no guarantee that it will be so regarded by college students. One teaches only as another learns and the springs of learning are psychological and not medical fiat.

4. He must be a student of human problems. How to select a vocation and to meet vocational troubles, how to select a wife and to regard married life may offer more significant problems in hygiene teaching than a predetermined logical arrangement of eight lectures on immunity.

If it is remembered that the aim in teaching hygiene is to get people to live at their best, the necessity for these qualities will be clear.

In addition, it should be noted that the above discussion has not attempted to answer the question of the allocation of responsibility for health service, or health supervision, or physical education in the college. It has only considered health teaching.

The conclusions, then, are that physicians may be as ineffective as other persons in teaching health; that many persons trained in physical education are adequately helping students to live at their best and therefore teaching health effectively; that the qualities desirable in any teacher of health are a scientific attitude, freedom from the academic mind, open-mindedness, and understanding of life's problems.

Royal Sanitary Institute at Plymouth

THE Royal Sanitary Institute will hold its 39th Congress and Exhibition at Plymouth, July 16–21 at the invitation of the Town Council of Plymouth. The meeting is held to stimulate interest in all public health matters and offer an opportunity to health authorities and to representatives of professional and industrial organizations to discuss problems relating to public health administration. Sanitarians from many countries will be present to discuss the most recent advances in preventive medicine and sanitary science.

A health exhibition illustrating municipal sanitation and domestic health and comfort will be arranged for the delegates.

Any members or Fellows of the A. P. H. A. who expect to be in England at the time of the Congress are asked to communicate with Homer N. Calver, Executive Secretary, 370 Seventh Avenue, New York, N. Y.

Swimming Pools and Other Public Bathing Places*

A COMMITTEE on Swimming Pools was appointed by the Sanitary Engineering Section of the American Public Health Association at the Chicago Meeting in December, 1918. At the first Conference of State Sanitary Engineers at Washington in May, 1920, a similar committee was appointed, two of the three members being also members of the A. P. H. A. committee. These committees have been continued from year to year and since the personnel has always been practically identical, the two separate committees have worked together as one body. At the 1925 meetings the Conference and the Sanitary Engineering Section each voted to unite the two separate committees into a joint committee representing both organizations.

The work of these committees has been greatly facilitated by the continued reappointment of its members. Stephen DeM. Gage, at present chairman of the Joint Committee, has served continuously as chairman of the Conference committee and has been continuously a member of the A. P. H. A. committee since these committees were instituted. George W. Simons, Jr. has also served continuously on both committees with the exception of 1926, and was chairman of the A. P. H. A. committee from its inception until it was merged in the Joint Committee. Harry F. Ferguson has served continuously since 1920. E. S. Tisdale has served continuously since 1922, and C. G. Gillespie has served as a member since 1920 with the exception of the two years 1920-1922. Other present or former members of these committees have been J. W. M. Bunker, 1918-1919, M. C. Whipple, 1918-1920, M. F. Hasbrouck, 1919-1920, Ralph Hilscher, 1920-1923, H. V. Pedersen, 1924-1926, Jack J. Hinman, Jr. 1925-1927, Howard W. Green, 1925-1926, and Richard Messer 1925-1927.

At the time when these committees were instituted the practice as to construction, equipment, and operation of swimming pools varied widely, and only two states, California and Florida, had made any effort to put bathing places under the supervision of the public health authorities. The first work of the committees, therefore, was to collect and disseminate information as to conditions and methods at pools in dif-

* Report of the Joint Committee on Bathing Places of the A. P. H. A. and the Conference of State Sanitary Engineers, presented to the Public Health Engineering Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, Oct. 18, 1927.

ferent parts of the country. Early in its history the committee met the challenge that swimming pool sanitation was not a public health problem by collecting and presenting statistics to show that a considerable number of epidemics of different diseases had been caused by improperly operated swimming pools or by the indiscriminate use of incompletely sterilized bathing suits and towels. In other reports the committee has presented data on the methods of laundering suits and towels, on methods of disinfection of pool waters, on methods and equipment for the prevention of accidents, as well as on a variety of other related topics.

During recent years the committee has received repeated requests to prepare a standard code which might be used as a basis for regulations for the sanitary control of pools and other bathing places. In 1923 both committees presented tentative standards for the physical, chemical, and bacterial quality of swimming pool waters together with certain operating regulations aimed to facilitate the maintenance of such standards. Although these standards have not been formally adopted by either of the organizations to which they were presented, they have become quite generally accepted and as a whole or in part have been incorporated into the sanitary codes of a number of different states and municipalities. In its report to the Conference of State Sanitary Engineers in May, 1926, the Joint Committee recommended tentative standards for the design, construction, and equipment of swimming pools, and in its report to the Public Health Engineering Section (formerly the Sanitary Engineering Section) in the fall of the same year incorporated with these standards the tentative standards of water quality which it had previously presented in 1923. Both organizations after full discussion referred the reports back to the committee with instructions to make such minor corrections and revisions as might be advisable and present a final report on standards for adoption at the 1927 meetings.

The standards as presented represent not only the experience of the various members of the committee, but the consensus of opinion of a large number of sanitary officials and swimming pool operators throughout the country. Swimming pools and other bathing places are now being studied intensively by health officials throughout the country and with advanced knowledge of practical working conditions and new developments in equipment and operating methods, changes in standards of this kind become inevitable. If by setting up standards which are impracticable, or which are either too strict or too lenient our committee has paved the way for better standards and bet-

ter conditions, we may well feel that we have advanced the cause of sanitary progress.

The report to the Public Health Engineering Section, with the standards presented at that time, was published in full in the *American Journal of Public Health* for December, 1926, and reprints of the same have been distributed quite widely. Your committee has had much correspondence with various persons interested in swimming pool sanitation with reference to various sections of these standards, and it appears that no radical changes are advisable. A few minor changes have been made in the wording of certain of the sections in order to promote clarity.

A brief historical preface, together with an appendix * giving illustrations of the method of computing the bathing loads on typical pools, has been prepared for publication with the standards which are finally adopted.

Your committee now recommends the adoption of the standards as printed with the following changes.

Section *VI*. Add following sentence at the end of section. "An illustration of the computation of the safe bathing load for typical pools is given in the appendix."†

Section *XVIII*, E. Change wording of section to read as follows. "Sterilization of clear water may be obtained by exposure in thin films to ultra-violet rays. It is claimed by the proponents of this method of swimming pool disinfection that the water after treatment contains a residual disinfecting agent whose action is similar in effect to that which is obtained by the use of a slight excess of chlorine either as gas or in solution. So far as the committee has been able to determine no conclusive evidence has been produced to establish this claim. Until such evidence is produced it must be assumed that disinfection by this process proceeds according to the law of purification by consecutive dilution and is subject to the limitations imposed by that law. On this assumption there is never any definite and determinable amount of disinfectant in the pool water to act on infectious material which may be discharged by bathers during the bathing period at the time when such material is most dangerous. In a few cases satisfactory control of the bacterial content of pool water has been reported by the use of ultra-violet disinfection alone. In a considerable number of instances, however, it has been found advisable to reinforce or supplement the ultra-violet treatment by treatment of the pool with chlorine or hypochlorites. Until reliable evidence is produced that ultra-violet treatment will cause the pool water to contain a sufficient residual disinfectant to take care of casual contamination and until methods have been devised by which any such residual disinfecting action can be readily determined and controlled, the committee cannot recommend the use of violet ray apparatus alone for disinfection of any pool where the bathing load is high or where large temporary loads are likely to occur."

Section *XXIV*, A. Change minimum excess chlorine required from 0.1 p.p.m. to 0.2 p.p.m., making section read as follows. "Whenever chlorine, calcium hypochlorite or other chlorine compounds are used for swimming pool disinfection, the

* See next page.

amount of available or excess chlorine in the water at all times when the pool is in use shall not be less than 0.2 p.p.m. or more than 0.5 p.p.m."

Section *XXV*. Add a new paragraph to read as follows: "D. All chemical and bacterial analyses should be made in accordance with the procedures recommended in the *Standard Methods of Water Analysis* of the A. P. H. A. in so far as those methods are applicable to swimming pool waters."

Section *XXVII*, B. Reword this section to read as follows. "At any pool where the addition of disinfectant is not continuous during the bathing period the total number of persons permitted to use the pool between any two consecutive disinfections shall not exceed 7 persons for each 1,000 gallons of water in the pool and each disinfection shall be sufficient to insure that the bacterial quality of the water shall conform to the limits stated in Section *XXV* of these standards.

An illustration of the computation of the limiting bathing load is given in the appendix.

STEPHEN DEM. GAGE, (A-C) *Chairman*
HARRY F. FERGUSON (A-C)
C. G. GILLESPIE (C)
RICHARD MESSER (C)
W. S. TISDALE (A-C)
JACK J. HINMAN, JR. (A)
GEORGE W. SIMONS, JR. (A)

(A) Public Health Engineering Section, A. P. H. A.
(C) Conference of State Sanitary Engineers.

APPENDIX I.

ILLUSTRATION OF COMPUTATION OF BATHING LOAD LIMITS FOR A TYPICAL POOL IN ACCORDANCE WITH REQUIREMENTS STATED IN CHAPTERS VI AND XXVII.

Section VI. Estimation of number of bathers who may safely be permitted to use a pool at one time.

Case 1. Assume a pool 60 feet x 20 feet in area, minimum depth 5 feet, capacity 50,000 gallons. No diving board or other specified diving area. Entire area 1,200 square feet is swimming area. Allowing 27 square feet per person (VI, C.) the maximum safe load at one time is $1200 \div 27 = 44$ persons.

Case 2. Assume same pool as Case 1 with a diving board projecting 10 feet at center of one end of pool. As pool is 20 feet wide and 10 feet radius from end of board is reserved for diving, diving area is 400 square feet. Safe limit for this area is 12 persons. (VI, B.) Swimming area is reduced to 800 square feet in which maximum safe load is $800 \div 27 = 30$ persons. Total maximum safe load at one time under these conditions is $30 + 12 = 42$ persons.

Case 3. Assume a large pool, 18,000 square feet area, deep water with one diving tower in center, water depth less than 5 feet on 75 per cent of pool area. The safe load at one time should be computed separately for each of these zones. Diving area may be computed as a circle of 14-foot radius measured from center of tower, with simultaneous diving in each of four quadrants. Diving area = 616 square feet with maximum safe load of 48 persons. Shallow or wading area = 75 per cent = 13,500 square feet in which the maximum safe load is $13,500 \div 10 = 1,350$ persons at one time. Swimming area is 3,994 square feet in which maximum safe load is estimated at $3,994 \div 27 = 148$ persons at one time. The maximum safe load at one time in this pool may be estimated as $48 + 1,350 + 148 = 1,546$ persons.

Section XXVII. Estimation of permissible maximum bathing load limits in relation to water replacement and disinfection.

Case 4. Fill and Draw pools with intermittent disinfection

Assume a pool of 50,000 gallons. Under XXVII, A, 50 x 20 = 1,000 persons may use the pool before it must be emptied, cleaned and refilled. Assuming the water supply conforms to the requirements of Section XXV, 50 x 7 = 350 persons may use pool after filling before disinfection is required. XXVII, B. After complete disinfection 350 additional persons may use pool before a second disinfection is required. After second complete disinfection 300 additional persons may use pool at which time 1,000 persons will have used the pool and the water must be replaced.

Case 5. Flowing through and recirculation pools

Assume a pool of 50,000 gallons with water being withdrawn and replaced with new or filtered water at a rate of 2,000 gallons per hour. Under XXVII, A, the volume of new clean water being added would be sufficient for 2 x 20 = 40 persons per hour or 400 persons during a 10-hour bathing day. If the flowing through or recirculation were continued throughout the entire 24 hours, with bathing limited to 10 hours, there would be an accumulation of 2,000 x 14 = 28,000 gallons of clean water during the non-bathing interval or a sufficient amount for 28 x 20 = 560 additional persons. The total load on this pool would therefore be limited to 400 + 560 = 960 persons per day by the clean water requirements.

If disinfection were intermittent the number of persons using this pool between any two consecutive complete disinfections would be 350 as in Case 4. The maximum usage which could be made of this pool in one day under the stated conditions with intermittent disinfection would be as follows: After complete disinfection in the morning 350 persons could use the pool. A second complete disinfection could then be given the pool and an additional 350 persons permitted to use pool. A third complete disinfection could then be given and an additional 260 persons be permitted to use the pool before the volume load limit of 960 persons was obtained.

With continuous disinfection it must be assumed that the pool is in a state of complete disinfection at all times while the excess chlorine is within the limits prescribed in XXIV, A. Under these conditions the rate of water replacement would govern as described above, and 960 persons per day could use the pool.

It will be noted that if the maximum-safe-load-at-one-time rule were strictly observed it would require over 21 consecutive classes of 44 persons each or an average of one class every 28 minutes to attain this maximum in one day. The committee has no sufficient information on pools operated with excessively high bathing loads, and it is possible that the required chlorine content could not be maintained under the extreme conditions stated. It seems probable, however, that if classes were kept within the safety limits specified and the chlorine content maintained within the prescribed limits, the other stated load limits would be unlikely to be exceeded in ordinary practice.

Social Workers To Meet In Paris

TWENTY-ONE nations will be represented at the First World Congress of Social Workers to be held in Paris, July 8–13, 1928. John A. Kingsbury, secretary of the Milbank Memorial Fund who attended a meeting of the organization committee of the Congress in Prague estimates that more than 1000 American delegates will attend the Congress to be held under the patronage of the President of France. The participating groups include the International Child Welfare Congress, International Housing and Town Planning Congress, International Congress of Public and Private Welfare and International Conference of Social Work.

Disposal of Sewage and Industrial Wastes*

THE COMMITTEE'S activities this year have taken the form of brief papers on subjects of current interest, together with the completion of the Definitions, as follows:

Almon L. Fales, Boston, Mass., writes on Progress in the Control of Pollution by Industrial Wastes

W. L. Stevenson, Harrisburg, Pa., on Waterway Sanitation

C. B. Hoover, Columbus, O., on Sludge Disposal

C. M. Baker, Madison, Wis., (although not a member of the Committee) has kindly prepared a paper on The Stream Pollution Problem, showing coöperation in the state of Wisconsin.

Kenneth Allen, New York, N. Y., has completed the Definitions of Terms Used in Sewerage and Sewage Disposal Practice.

Ten years ago a list of 97 definitions was presented by a committee of this section of which George S. Webster was chairman. Mr. Allen was an active member of that committee.

In 1924 a committee of this section was given the task of "Rewriting the Definitions." A reprint of the previous list was sent out to all members of the section and numerous replies were received. Similar action was also secured from the Sanitary Engineering Division, American Society of Civil Engineers. Our committee completed its report and presented it at the section meeting in Detroit 3 years ago. This list consisted of 321 titles arranged dictionary style, to which was appended a Schematic Outline broadly classified under 3 heads:

I. Liquid and Water Carried Wastes flowing in Sewers and Drains
II. The Collecting System
III. Disposal

The A. S. C. E. committee did not present any definitions at that time and its subsequent work was interrupted by the regrettable death of its chairman, Professor George C. Whipple.

This work was later taken up by W. W. Horner of St. Louis, and a committee of the Sanitary Engineering Division, A. S. C. E. Debatable definitions were submitted to many well known engineers and the mass of data was then referred to Mr. Allen, who, from his association with the original committee, his membership in both the societies concerned and his constant and close contact with the subject, was deemed espe-

* Report of the committee, presented to the Public Health Engineering Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 18, 1927.

cially fitted to harmonize the definitions and to prepare the final draught which is herewith submitted. It now consists of 310 titles and a total of 332 definitions.

A duplicate of these definitions was presented by Mr. Horner and his committee at the A. S. C. E. meeting at Columbus, O., on October 13, 1927.

The committee trusts that it has fulfilled its assignment and herewith submits the above mentioned papers and the "Definitions" as its report for the year 1927.

JOHN F. SKINNER, *Chairman*
KENNETH ALLEN — CLARENCE B. HOOVER
ALMON L. FALES — W. L. STEVENSON

Definitions of Terms

Sanitary Engineering Division,
of the American Society of Civil Engineers.

Gentlemen:

Your Committee on Definitions of Terms Used in Sewerage and Sewage Disposal Practice, begs leave to submit its final report as follows:

This committee was first constituted in 1924, under the chairmanship of the late Professor George C. Whipple. Professor Whipple's death came in the fall of 1924, shortly after the submission of a tentative progress report.

At this time, a similar committee of the Sanitary Engineering Section of the American Public Health Association, under the chairmanship of John F. Skinner, presented a report to that section of the A. P. H. A. Both reports were received and the respective organizations instructed their committees thereafter to act jointly until such time as a joint report could be presented for the approval of each society.

In the summer of 1925, the committee of the A. S. C. E. was reconstituted, to consist of Paul Hansen, Theodore Horton, and W. W. Horner, *Chairman*. In 1926 and 1927, the committee has consisted of Paul Hansen, E. Sherman Chase, and W. W. Horner, *Chairman*. During the years 1925, 1926, and 1927, the personnel of the A. P. H. A. committee has also varied, but the chairmanship of Mr. Skinner has been continuous.

In the summer of 1925, the two committees reached an agreement on a plan of joint operation, and on October 19 and 20, a joint conference was held in St. Louis, between some of the members of each committee. At this time all previous lists of definitions were canvassed and the beginning of a new list made up. The list prepared at this meeting was sent out to the members of each committee and was modified quite appreciably by correspondence during the fall of 1925. Agreement was reached with regard to the definitions of the greater number of terms, but there remained a considerable list with regard to which radical differences developed.

In the fall of 1926, the joint committee expanded its membership temporarily by sending to approximately one hundred sanitary engineers, definitions in the alternate of some seventy terms, and received in turn, definite expressions of opinion, from about thirty-five men. With the aid of this assistance, the committee reached conclusions on about two-thirds of the disputed terms.

The work of preparing the final list was then assigned to Kenneth Allen, to whom were furnished full statements covering the differences of opinion still existing. Mr. Allen submitted many of these questions to selected groups of engineers, and arrived at his own conclusions which were again presented to the joint committees for criticism.

Some further revision resulted and finally in September, 1927, the chairman of the two committees reached an agreement that little improvement could be expected by further discussion and recommended the submission of the report in its then existing form for adoption to the two organizations. This action having met with the approval of the membership of the two committees, your committee of the Sanitary Engineering Division of the A. S. C. E. presents the list of definitions herewith,* recommends that it be accepted by the division, and that it be presented for publication by the society.

The committee further requests that it be discharged and that a record be made of the desirability of the appointment of another committee on the same subject about five years hence.

W. W. HORNER, *Chairman*,
PAUL HANSEN,
E. SHERMAN CHASE.

* The Definition of Terms Used in Sewage Disposal Practice, which is the Report of the Joint Committee of the A. P. H. A. and the A. S. C. E., will be published as a manual by the A. S. C. E. Members of the Public Health Engineering Section of the A. P. H. A. will receive copies. Upon request the manual will be available to other members of the Association.

Medical Society of the County of New York

PREVENTION of disease is the general subject of a course of free lectures being given by the Medical Society of the County of New York, Public Health Education Committee, at the New York Academy of Medicine, 1 East 103 Street, New York, N. Y. These lectures, given on the second and fourth Thursday of each month at 4:00 p. m., started on January 12, and will continue until April 26. This course which the public is urged to attend, is given with the full coöperation of the New York Academy of Medicine.

Some of the lecturers on this program are: Beatrice Hinkle, M.D.; George K. Pratt, M.D.; Herbert B. Wilcox, M.D.; Matthias Nicoll, Jr., M.D., Commissioner of Health, New York State; Henry James, M.D.; Richard Kovacs, M.D.; Madge C. L. McGuinness, M.D.; Edward C. Titus, M.D.; Shirley W. Wynne, M.D., Deputy Commissioner of Health, New York City; Colonel Robert Starr Allyn; Harry Hopkins, New York Tuberculosis and Health Association; Aaron S. Blumgarten, M.D.; Rosalie S. Morton, M.D.

On March 22, the lecture will be on "Laboratories in the Diagnosis and Prevention of Disease." Anna W. Williams, M.D., will preside at this session and the lecturers will be Frederic E. Sondern, M.D.; M. C. Schroeder, M.D. and William H. Park, M.D., Director of Laboratories, Department of Health of New York City.

EDITORIAL SECTION

Expressions of opinion and statements of supposed facts are published on authority of the writer under whose name they appear, and are not to be regarded as expressing the views of the American Public Health Association, unless such statements or opinions have been adopted by vote of the Association.

EDITORIAL COMMITTEE

MAZÝCK P. RAVENEL, *Chairman* HOMER N. CALVER, *Managing Editor*

C. C. YOUNG, LOUIS I. DUBLIN, PH.D., E. R. HAYHURST, M.D., MERRILL E. CHAMPION, M.D., ARTHUR P. MILLER, C.E., HENRY F. VAUGHAN, D.P.H., JAMES A. TOBEY, LL.B., DR.P.H., EVART G. ROUTZAHN, C.-E. A. WINSLOW, DR.P.H., WALTER S. FRISBIE, SOPHIE C. NELSON, R.N.

UNITED STATES PUBLIC HEALTH SERVICE

ANNUAL REPORT OF THE SURGEON GENERAL

THE ANNUAL report of the Surgeon General is always of great interest. For the past two or three years, it has been more complete than ever before, since agreements have been entered into, by means of which we are kept in constant touch with health conditions throughout the world. These agreements also greatly assist our Service in preventing the introduction of contagious diseases into this country.

The two factors which best indicate general conditions for the country, are the total death rate, and the death rate of infants under one year of age per 1,000 live births. For 1926, the death rate for 28 states was 12.1 per 1,000 population, slightly higher than for 1925, apparently as the result of the large number of deaths from respiratory diseases. The infant death rate for 28 states was 72.8, also a little higher than the rate for 1925; but only 10 years ago, it was approximately 100 per 1,000 live births. There was a general decline in the death rate from most diseases. In Europe there was quite a severe epidemic of influenza, which fortunately did not reach this country, and in Asia there was a large amount of cholera, that country still being the home and hotbed of the disease.

In 1916, the late Dr. Guitéras pointed out that the greatest danger of the tropics to other countries was bubonic plague, and this warning was repeated in a report of the Surgeon General several years later. During 1926, it has shown a decreased prevalence, but is still one of the greatest menaces which we have to face. Approximately nine-tenths of the cases for the year have been in India.

All of us can remember when the name yellow fever made us shudder. Lately it has been confined to one small part of Africa, and during 1926 a single case was reported from Brazil. No case of cholera, yellow fever, or plague gained entrance to the United States during the year,

though 2 cases of plague, 17 cases of smallpox and 2 cases of leprosy were detected at the port of entrance, but got no further. Plague still exists among rats and ground squirrels in certain parts of California, and compels constant watchfulness.

Smallpox decreased, but it will astonish many to know that more than 30,000 cases were reported from 41 states. We cannot but believe that physicians depend too much upon a single vaccination. Revaccination should be practiced at regular intervals in childhood, and whenever a person is exposed to the disease. If a successful take does not result, the operation is painless; if a take does occur, it is evident that the patient needed it. Nothing in connection with medical science is better known than the fact that vaccination with revaccination will obliterate smallpox.

The examination of incoming vessels continues. Twenty thousand, two hundred and eighty-four vessels, with 820,793 passengers and 1,140,922 seamen were inspected at domestic ports, and a large number at insular ports. One of our best safeguards is the inspection at foreign ports of vessels and passengers bound for the United States. Five thousand, nine hundred and fifty-four vessels, 424,172 passengers and 272,873 seamen have been inspected for the year in this service. Seven thousand, one hundred and sixteen vessels were fumigated on account of disease or for the destruction of rodents, and more than 31,000 rats were found, 18,000 of which were examined for plague.

Perhaps the most discouraging feature of the report is the high prevalence of venereal diseases among patients treated by officers of the Service. This has averaged 20 per cent for many years, and for 1926, was 17.

Apart from the purely medical subjects reported upon, the most important features are two conventions, one held in Paris, attended by the representatives of 60 governments, to revise and improve existing treaties regulating martime commerce, and the other, a conference held in Washington of the Pan American Governments, for the formulation of a constructive program in matters pertaining to public health and sanitation.

ALASTRIM A FORM OF SMALLPOX

IT HAS been widely held that the general adoption of vaccination against smallpox has led to a modification of the disease, so that mild cases now occur, which otherwise would have been severe. Difficulties in diagnosis have arisen owing to this fact.

Others have held that there are two types of smallpox; one mild and one severe, and numerous theories have been advanced to account for

the differences between the two. The matter has been quite fully discussed by Dr. Chapin,[1] who rejected many of the theories which have been advanced, and who holds that there is a clear distinction between the severe form and the mild form, pointing out that the two types have existed together, and that it has been impossible to stamp out the mild form, in spite of rigorous isolation and vaccination. Furthermore the two types breed true. In the United States it has prevailed for upward of thirty years, while the classical and severe type has been comparatively rare. England has had a number of outbreaks of both types during the past twenty-five years.

More recently our attention has been called to a disease known as "alastrim," which also goes under the following names: amaas, varioloid, varicella, Kaffir milk pox, Sanaga pox, the Australian disease, Cuban itch, Philippine itch, etc. This has been held by some to be a distinct disease, though our Public Health Service has consistently maintained that it was a type of smallpox. A long series of experiments just reported by our Public Health Service has demonstrated that a "definite cross-immunity exists between alastrim and mild smallpox," as well as between alastrim and vaccine virus.

A number of experiments have been carried out on monkeys and rabbits, and the conclusion seems inevitable that alastrim is a type of smallpox, and should be treated as such.

REFERENCE

1. Chapin, Charles V., M.D., *J. Prev. Med.*, Sept., 1926.

THE NUTRITIVE VALUE OF OLEOMARGARINE

A STATEMENT concerning the food value of oleomargarine seems necessary in view of what was said in the abstract section of our issue of October, 1927, in which it was stated: "Oleomargarine is of no value for any nutritive purpose," this opinion apparently having been based upon a previous statement that "oleomargarine is practically devoid of vitamins." These pronouncements are obviously not supported by the fact.

Broadly speaking, there are two types of oleomargarine on the market, one which is made largely from animal fats, and one from vegetable fats, such as cocoanut oil, cotton seed oil, etc. It is therefore inaccurate to speak of oleomargarine without stating which type is referred to. However, it can be said with certainty that all oleomargarines have a food value equal to that of their constituents. The nutritive value of a substance is not entirely dependent upon its vitamin content. If we accept the vitamin content as a standard, we shall be obliged to dis-

card many of our most valuable food stuffs, such as wheat flour, sugar, lard, etc.

Rosenau [1] correctly says, "Since all of the ingredients are in themselves useful foods, the wholesomeness and nutritive value of the finished product is beyond question." He further states the well-known fact that oleo oil is a recognized source of vitamin A; and various studies by men such as Osborne and Mendel, Halliburton and Drummond, Steenbock and his associates, and a number of other investigators, have shown that the animal fats from which oleo oil is made, as well as the oil itself, contain varying, but often large amounts of vitamin A. Steenbock,[2] Hoagland and Snider,[3] and others have shown that the color of the fat and its vitamin content bear some relation to each other, those which are most pigmented being generally the richest in vitamin A. Osborne and Mendel have shown that the oleo oil contains practically all of the vitamin A present in the beef fat from which it was made, leaving very little in the oleo stearin, which is used chiefly in the preparation of baking compounds. The "yellow oil" prepared from fats derived from grass-fed cattle, generally runs highest in vitamin A.

An examination of twenty-four specimens of oleo oil collected from various parts of the United States, from Denver and Fort Worth on the west and south, St. Paul on the north, and New York on the east, have shown that the yellow oils are much the richest in vitamin A, a ration containing 10 per cent of this grade frequently producing normal or very nearly normal growth in rats.[4]

Some oleomargarines contain butter fat, which is intentionally added, and it is the general practice to churn oleomargarines in milk. Recently some manufacturers have been adding vitamin A. The process is said to be a trade secret, but it has been suggested that cod liver oil or other substances notably rich in vitamin A are used. The fact is that at least one of these products, although made from vegetable fats, has been constantly improving, and recently has shown results in experimental animals better than those produced by butter.[4] The Medical Research Council [5] of England rates oleomargarine made from animal fats other than lard, from + to + + . Cod liver oil and some other fish oils very rich in vitamin A are rated + + + .

There is no question that butter is one of our richest and most dependable sources of vitamin A, yet, without known exception, authors state that the content is variable and apt to be very deficient in the butters produced in late winter and early spring. It has been shown that cows can be maintained in apparently good health for long periods on a diet practically devoid of vitamin A, and produce milk, and consequently butter, which is very deficient in this substance.

Numerous experiments have shown that oleomargarine is equally as digestible as butter, is palatable, and keeps much better than the poorer grades of butter. The animal fats from which it is made are subject to federal meat inspection, and only the fats from animals which have been passed by our government officers can be used in its preparation. We are therefore assured of its entire wholesomeness. On the other hand, any dirt, rancidity or extraneous flavors make the fat unsuitable for the manufacture of oleomargarine.

In the manufacture of the vegetable fat oleomargarines, which do not come under the Meat Inspection Service, pasteurization of the milk and other dairy products used is regularly practiced.[1] The late Professor Harrington,[4] of Harvard University, said that oleomargarine has been misrepresented to a greater extent than probably any other article of food, and pointed out that it was made only from the cleanest materials and in the cleanest possible manner; that it was equally as wholesome as butter, and that when sold for what it is, and at the proper price, it brought into the dietary of those who could not afford the better grades of butter, an important food fat. We know of nothing which justifies a modification of this statement. The increased use of the vegetable oils and our newer knowledge of the importance of vitamins, make it necessary to supplement margarines with good whole milk, or other vitamin bearing foods. If the practice of adding vitamins, above mentioned, becomes general, even this precaution will not be so urgent.

REFERENCES

1. Rosenau, Milton J., *Preventive Medicine and Hygiene.* (5th ed.), 1927.
2. Steenbock, H., Sell, M. T., and Buell, M. V., *J. Biol. Chem.*, 47, I, 1921.
3. Hoagland, Ralph, and Snider, George C., *J. Agricultural Research*, XXXII, 5, 1926.
4. Personal communication from a Departmental Head, Washington, D. C., 1928.
5. Report on the Present State of Knowledge of Accessory Food Factors (Vitamins). *Special Report Series, No. 38* (revised).
6. Richardson, Mark Wyman, M.D., *A Manual of Practical Hygiene.* (5th ed., rev.), 1914.

ASSOCIATION NEWS

CENTRAL PROGRAM COMMITTEE

THE first meeting of the Central Program Committee to arrange for the scientific program of the Chicago Annual Meeting, to be held October 15 to 19, will be held February 11. All members and Fellows of the Association who expect to offer papers for the Chicago program are urged to communicate without delay with their respective section chairmen or with the Executive Secretary of the Association, Homer N. Calver, 370 Seventh Avenue, New York, N. Y.

In past years it has been necessary to close the program two months or more before the Annual Meeting and as a result it has been impossible to accept valuable papers offered at the last moment.

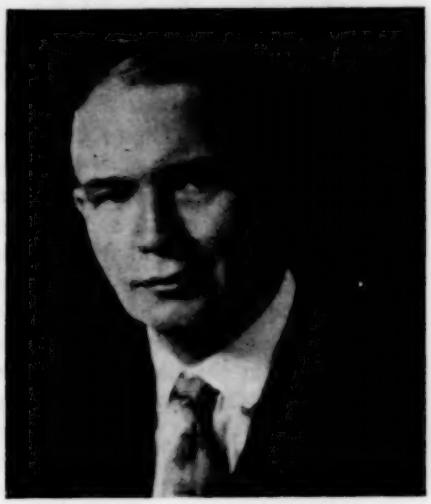
The Program Committee is interested in having contributions from new authors and accounts of new work which has not been reported elsewhere. The presentation of papers is limited to fifteen minutes (3000 to 5000 words) and each author is expected to furnish a copy of his manuscript, or an abstract of it, in advance of the meeting.

The Hotel Stevens has been selected as headquarters for the meeting and according to present plans all sessions and exhibits will be held in this hotel.

Five hundred rooms and baths at $3.50 for single occupancy have been reserved for members and Fellows of the Association. Those who make their reservations too late to secure one of these rooms can be assured of accommodations at $4.00 per day. In making reservations for the purpose of the meeting it is essential to indicate the date of arrival. Accommodations will be assured if those making the reservations will state that they are members of the American Public Health Association.

DR. WALLACE WITH THE A. P. H. A.

JAMES W. WALLACE, M. D., Deputy Health Commissioner of Iowa has been appointed Associate Field Director for the Committee on Administrative Practice, and will assume his duties with the Association on February 1. He will be engaged in making surveys and appraisals of health work.



James W. Wallace, M.D.

Dr. Wallace has had extensive experience in public health work. He obtained his M. D. degree from Queens University, Toronto, later taking graduate work at the Rush Medical College, University of Chicago and the Mayo Clinic, Rochester, Minn., and the Crile Clinic, Cleveland, O. He obtained a Certificate of Public Health from Massachusetts Institute of Technology and Harvard University.

Dr. Wallace served for 4 years with the University Hospital Service in Egypt, England and France, and during the World War was awarded the Mons

Medal for service with the Canadian Forces.

He has been associated with the International Health Board, having been appointed to the state health programs conducted by the Board in North Carolina, Alabama and Virginia. Before being appointed Deputy Health Commissioner of Iowa, which position he has occupied for the last 2 years, he was director of rural health organization of Iowa and was State Epidemiologist in Utah. His outstanding piece of work in Utah was the extensive goiter survey.

COMMITTEE ON ADMINISTRATIVE PRACTICE

THE public presentation of the report of the St. Louis health and hospital survey, made by the Field Staff of the Committee on Administrative Practice, was made to the local committee in St. Louis on January 9. Public meetings were also held at the Chamber of Commerce and before the medical society for the presentation of the public and professional aspects of the study. Haven Emerson, M.D., as consultant, presented the report dealing with the facilities for the care of the sick.

The annual health examination of the Child Health Demonstration Areas of the Commonwealth Fund has been begun by the appraisal of the services in the city of Fargo, N. D. Studies of Athens and Clarke County, Ga., and Rutherford County, Tenn., the two southern demonstration areas, will be carried on during February.

The Field Staff of the Committee on Administrative Practice will spend some time during February in Montreal where it has been called in as consultant in connection with a survey and appraisal of health activities being carried on by the Montreal Anti-Tuberculosis and General Health League in coöperation with the Health Officer.

Two important sub-committees of the Committee on Administrative Practice met during January. The Sub-committee on Analysis of Public Health Procedure, Allen W. Freeman, M. D., *Chairman*, has as its function the analysis of demonstrated values of various community health activities in terms of actual health saving—a problem of enormous difficulty, but the solution of which will alone give us the ultimately sound basis for the standards and the appraisals now necessarily grounded in the main on group judgment and empirical experience. The personnel of this committee includes: Henry F. Vaughan, D.P.H., Geo. T. Palmer, D.P.H., Geo. C. Ruhland, M.D., Lowell J. Reed, Ph.D., Edgar Sydenstricker.

The Sub-committee on Model Health Ordinances spent two days in a discussion of essential items to be written into the basic legislation of a health department. This committee does not expect to put its material into standard legal form. It contemplates an outline of those items which should be put into the basic laws and those which should be written into a sanitary code or other rules or regulations adopted by the health department. Henry F. Vaughan, D.P.H., as chairman, is assisted by Haven Emerson, M.D., Huntington Williams, M.D., and James A. Tobey, Dr. P.H., in this work.

A survey of city and county health activities in Spartanburg, S. C., was completed in January by C. St. Clair Drake, M. D., Field Associate, Committee on Administrative Practice.

THE Local Committee for the 57th Annual Meeting of the Association, to be held in Chicago the week of October 15, 1928, is being organized, with Professor E. O. Jordan as Chairman, and Arthur E. Gorman, Secretary.

THE committee authorized to direct a census of public health workers has been appointed. It is composed of Ar-

thur E. Gorman, C. E. Turner, John F. Norton, George H. Van Buren and John L. Rice. The first meeting of the committee will be held in the Executive Offices February 10.

THE second public health conference called by the American Medical Association will be held March 30-31 at A. M. A. headquarters in Chicago. The A. P. H. A. has been invited to be represented at this conference.

WILMER R. Batt, M.D., Field Representative for the Committee on Registration Area of the A. P. H. A. is now working in Texas, with headquarters in Austin.

DEATH OF PROFESSOR JAMES O. JORDAN

PROFESSOR James O. Jordan, Milk Inspector of the Boston Health Department, died on January 6, 1928, at the New England Baptist Hospital.

Professor Jordan was born in Lisbon, Me., May 26, 1864. After graduation from the College of Pharmacy, he was appointed, in 1884, a chemist in the Bureau of Milk Inspection of Boston. He held this position for 21 years and was then promoted to the position of Milk Inspector. For several years he taught at the college and became a life member of its Corporation. He was Secretary of the Section on Food, Drugs and Nutrition of the American Public Health Association, a member of the Executive Committee of the Massachusetts Association of Boards of Health, a member of the Boston Medical Milk Commission, a member of the Massachusetts Milk Inspectors Association, as well as a member of several other associations, and belonged to the Fraternal Order of Elks.

Professor Jordan devoted much of his life to the enforcement of milk laws and was a pioneer in the cause of milk legislation. He was the author of many papers on the different phases of the milk problem and is widely known for his work.

In his service to the section he was dependable, capable and faithful. He was quiet and unassuming in manner. In one of his last letters he recommended that committees be made small in membership for effective work, and he heartily endorsed the idea that we want "facts, not opinions." He will be missed from the work of the Association. His long affiliation with us and his close identity with the work of the Food and Drugs Section as Secretary, since its establishment in 1916, gave him an intimacy with the work and an acquaintance with details that were highly valuable to the successive chairmen. An old timer has passed on. The cause of public health has lost one of its best workers.

LETTER TO THE EDITOR

TO THE EDITOR:

In promoting vaccination, and more recently, in promoting immunization against diphtheria, health officers have frequently fallen into the blunder that Jenner himself committed when he claimed for the prophylactic treatment much more than facts would warrant.

It seems to me that the progress of the movement to adopt immunization as routine practice is hindered rather than helped by such extreme statements, since it leaves the practice open to valid criticism on the part of opponents, who need only a few dramatic exceptions to discredit the principles advocated by health officers. I am writing you now because I have just noted an exceptionally bald statement from the health department of one of our better cities:

> Every child after the age of six months should be protected against diphtheria. The treatments are safe. They cannot possibly do the child harm, and once the immunity against diphtheria has been developed by means of toxin-antitoxin, it insures an absolute protection for life.

One can accept the conclusions—that is, the advisability of immunizing every

child after the age of six months—but is it sound public education to rest the case on the assertions that follow? When Dr. Stewart in Minnesota, or some other student, points out the dangers in allergic reactions, the anti-vivisectionists and anti-vaccinationists have enough material to discredit the whole program. My answer would be, not the silencing of Dr. Stewart, but the challenging of the reckless claims made by public health officers. The health officer or the physician who administers toxin-antitoxin ought to know that such treatments "are safe"; but he ought to know also that they *can* do the child harm under certain conditions, although the careful technician knows how to recognize the danger in most cases. Moreover, it is utter nonsense to talk about insuring *absolute* protection, and that *for life*.

Would it be asking too much of you to write an editorial in the AMERICAN JOURNAL OF PUBLIC HEALTH on the danger of abusing the ignorance of the public or the credulity of the public, whether by quacks or by sincere public health officers? There is in any case no use in putting weapons into the hands of your supposed enemies.

Sincerely yours,

BENJ. C. GRUENBERG,
Managing Director.

American Association of
Medical Research,
New York, N. Y.,
November 29, 1927.

NEW MEMBERS

A. Faith Ankeny, R.N., Des Moines, Ia., (Assoc.)

Mary Elizabeth Ayer, R.N., Northampton, Mass. Public Health Nursing Consultant, Division of Hygiene, Mass. State Department of Health.

Berkshire Life Insurance Company, Pittsfield, Mass. Sustaining Member.

Wescoat Adalbert Black, A.B., M.D., Dillon, S. C. County Health Officer.

James Andrew Britton, B.S., M.D., Chicago, Ill. Medical Service, International Harvester Co.

Herman Jacob Brueckner, B.S., Cincinnati, O., Milk and Dairy Inspector, City Health Department.

Harry M. Bulbrook, M.A., in Sc., Fort Worth, Tex.

Nina Fay Calhoun, M.D., Dallas, Tex. Director of School Health Department, Dallas Public Schools.

Dottor Carlo Cerruti, Turin, Italy. Assistant to the Professor of Hygiene, Royal University, Turin, Italy (Assoc.)

Nathan Civen, B.A., Concord, N. H., Chemist, New Hampshire State Board of Health, Food & Drugs Division

Ethlyn Cockrell, St. Louis, Mo., Itinerant Public Health Nurse, American Red Cross

Charles S. Curris, M.D., St. Anthony, Newfoundland. Medical Officer in Charge, International Grenfell Association, Inc.

Charles Edmund De Leuw, B.S., C.E., Chicago, Ill. Consulting Sanitary Engineer.

Dorothy Deming, A.B., R.N., New York, N. Y. Assistant Director, National Organization for Public Health Nursing

Mary Grace Dodd, R.N., Jacksonville, Fla. Bureau of Child Hygiene, State Board of Health.

Charles U. Duckworth, D.V.M., Sacramento, Calif. Chief Bureau of Dairy Control, State Department of Agriculture

Gideon J. Ferreira, B.Sc., M.D., Duluth, Minn. Health Officer, St. Louis Co.

Forest Fletcher, Lexington, Va., Professor of Hygiene and Physical Education, Washington and Lee University.

Marjorie L. Foster, B.S., Boston, Mass., New England Dairy and Food Council

Henry B. Freiberg, M.D., Cincinnati, O. Department of Health (Assoc.)

Jule Oleander Graves, Jacksonville, Fla. Staff Nurse, State Board of Health, Fla.

Fred B. Green, D.V.M., Lufkin, Tex., Field Supervisor, State Board of Health

Esther F. Greene, A.B., Providence, R. I., General Secretary, R. I. Society for Mental Hygiene

Isabel Pauline Haggerty, B.S., M.A., Passaic, N. J. Health Science Instructor, Passaic Public Schools

Clyde R. Harvill, Charlotte C. H., Va., Sanitary Officer, Charlotte Co., Va.

William Howard Haskell, D.V.M., State Health Department, Nashville, Tenn.

Jeanette M. Hays, Milwaukee, Wis., Registrar, Wisconsin Nurses Club & Directory

Dr. Xavier Hernandez, M.D., Mexico City, Mex. Department of Public Health

G. O. Higley, Ph.D., Delaware, O., Health Commissioner, Delaware City District

Donald Hodd, M.D., Harrington Hospital, Saguenay Co., Canada. Medical Officer in Charge

Horton & Converse, Los Angeles, Calif. Sustaining Member

J. R. Jennings, B.S., Phoenix, Ariz. State Dairy Commissioner

Florence B. Karpowicz, R.N., Buffalo, N. Y. School Nurse, Bureau of Child Hygiene

Eloise Adele Kennedy, Kansas City, Mo., Housing Inspector, K. C. Consumers' League

Charles Glen King, Ph.D., Pittsburgh, Pa., Assistant Professor Sanitary Chemistry, University of Pittsburgh

Moses T. Knappenberger, Warren, O. Health Commissioner

Ida M. Lewis, R.N., Brookline, Mass., Instructor in Health, Public Schools

Frank Light, M.D., Ottawa, O., Health Commissioner, Putnam Co. General District

LeRoy M. A. Maeder, M.D., LL.B., Philadelphia, Pa., Acting Medical Director, Pa. Mental Hygiene Committee

Emma Jane Mange, Kingston, Mass. Public School Nurse

Philip E. Marks, M.D., Pittsburgh, Pa., Superintendent Bureau of Infectious Diseases, Dept. of Public Health

Carl Martin, Jacksonville, Tex. State Sanitarian, State Board of Health

Hector Clive McAlister, M.D., Fort Wayne, Ind. Medical Director, Lincoln National Life Insurance Company (Assoc.)

Clio McLaughlin, Jacksonville, Fla., State Rural School Nurse, State Board of Health

Charles F. Mebus, Glenside, Pa., Civil Engineer

Herman Moret, M.D., Battle Harbor, Labrador. Medical Officer in Charge, International Grenfell Association, Inc.

Marion Parks Morse, R.N., Oyster Bay, N. Y. In Charge, Oyster Bay Visiting Nurse Association

Louise M. Murphy, Lincoln, Neb., Director, Division Child Hygiene, State Bureau of Health

The National Kraut Packers Association, Inc., Clyde, O. Sustaining Member

Lockhart Nelson, Hillsboro, O., Health Commissioner

Anna M. Neukom, B.A., R.N., Binghamton, N. Y. School Nurse

Laura Cowan Niblock, R.N., Jacksonville, Fla. State Board of Health Rural School Nurse

Harold Watson Nightingale, S.B., M.S., Seattle, Wash., State Sanitary Engineer.

Henry Locke Paddon, M.A., North West River, Labrador, Medical Officer, International Grenfell Association, Inc.

Charles Whitaker Pemberton, M.D., Houston, Tex., Supervisor of Hygiene, Public Schools of Houston

Jean Pinckney, M.A., Austin, Tex., Chief of Bureau of Nutrition & Health Education, University of Austin

William T. Pratt, M.D., Rockville, Md., Deputy State Health Officer

Phyllis Comyn Radford, M.A., Chicago, Ill., Director, School Health Service, The Quaker Oats Company

Winifred Rand, A.B., Detroit, Mich., Chairman, Central Bureau of Nursing

Benjamin B. Robbins, M.D., Bristol, Conn., City Health Officer

H. R. Ross, M.D., Sterling, Kans., with City Board of Health

Anna L. Scherff, R.N., St. Louis, Mo., Staff Nurse, Municipal Nurses

Adelaide Ross Smith, M.D., New York, N. Y. Assoc. Professor in Medicine in Industrial Hygiene, College of Physicians & Surgeons, Columbia University

Robert G. Snyder, B.A., Sioux City, Ia., Laboratory Technician, Board of Health

Willard B. Soper, M.D., West Haven, Conn., Assistant Medical Director, William Wirt Winchester Hospital

Finis Suggett, M.D., Columbia, Mo., County Health Officer

Dr. Aleixo de Vasconcellos, Medical Professor of Bacteriology, University of Rio de Janeiro, Brazil, S. A.

Fred E. Vetz, B.S., Jersey City, N. J., Inspector of Foods, Department of Health, New York, N. Y.

S. O. Von Achen, Jefferson City, Mo., Sanitary Inspector, State Board of Health

Helen E. Whiting, Buffalo, N. Y., Executive Department of Health Education, Y.W.C.A.

Robert E. Winkler, Cincinnati, O. (Assoc.)

Elsie Witchen, R.N., Washington, D. C., Demonstration Nurse in Maternity & Infancy Hygiene, Children's Bureau

PUBLIC HEALTH ADMINISTRATION

HENRY F. VAUGHAN, D. P. H.

The Health of the School Child—Sir George Newman, in the *Annual Report of the Chief Medical Officer of the Board of Education* (England) for the year 1926, recognizes two common types of ill-balanced children; (1) the catarrhal child, in whom there is a tendency towards hypertrophy of the lymphoid tissue and a special susceptibility to inflammatory exudation from mucous surfaces and (2) neuropathic child, who shows a lack in nervous regulation of the whole body with atony of the muscles, the weight of the body being balanced by stance rather than by muscular action.

The author recommends that the following queries regulate the status of the abnormal child: (1) Is the debility due to general nurtural neglect in the child's home—insufficient sleep, inadequate and irregular meals, or vitiated atmosphere? (2) Is the debility the manifestation of some particular disease such as tuberculosis, rheumatism, or rickets? (3) Is it the after-effect of recent illness, measles, or broncho-pneumonia? (4) Is it an early sign of some oncoming disease? (5) Is it due primarily not to bodily disease, but to neuropathic or psychopathic disease?

The Problem of Goiter—The London *Lancet* for December 10, 1927, gives an interesting resumé of the International Conference held in Switzerland last August on the problem of goiter. In discussing the etiology and epidemiology of the subject McCarrison still insists that goiter is a syndrome including a great number of conditions of various origin. For endemic goiter—

He finds the pathogenetic explanation in a reasoned combination of iodine deficiency theory and infection theory. The latter is warmly supported by Galli-Balerio, who is only an adherent of the iodine deficiency theory to the extent that iodine is able to neutralize the noxa causing goiter where the latter is not acting too intensively. Iodine is the antidote whose employment should not prevent an interest being taken in all the essentials of general hygiene.

The Congress almost unanimously refused the specific goitrous infection theory.

The aims of goiter prophylaxis as brought out in the discussion, may be shortly summarized as follows: for man and cattle to supply the necessary physiological ration of iodine; for the already marked school goiter to combat this by individual iodine treatment in medical hands; to ensure a normal composition of food-supply containing vitamins; and finally, to combat the misuse of iodine in unphysiological doses, especially in the adult. Should a more general application of these principles result, the conference will have done something not only for the scientific recognition of endemic goiter, but also for its abolition.

It is interesting to note that at an International Congress on endemic goiter held in Lyons, in 1841, Dr. Prevost of Geneva ascribed goiter to the absence of bromine or iodine in drinking water. Ten years later the French chemist, Chatin confirmed this theory in its essential points. The present discussion of goiter and its prevention, therefore, dates back at least as far as the Conference of 1841.

Bureau of Health, Richmond, Va.—The 1926 report of the Bureau of Health forms a part of the annual statement of the Department of Public Welfare of Richmond. Two epidemics are noted, one of rabies in dogs, and the other of influenza and pneumonia, the latter being particularly severe among colored persons. Former records for typhoid fever were broken,

with less cases and deaths reported than usual, a death rate per 100,000 of 1.1 being recorded. An effective chart of the typhoid fever experience, 1880-1926, adds interest to the report. Efforts to eliminate dry closets and wells were continued and a reduction in the number of unsewered homes from 642 to 411, with a reduction in the number of wells from 159 to 108, was recorded.

On the basis of an estimated population of 189,084, a crude death rate of 16.05 is recorded; 23.8 for colored and 12.8 for white persons. The birth rate for white persons was 19.24; for colored persons, 25.68; for both combined, 21.13. In all, 21 per cent of the births were attended by midwives. An infant mortality rate of 107 is reported, the rate for colored infants especially being higher than recently. A declining birth rate, the influenza epidemic, an increase in deaths from infantile diarrhea, and increases in deaths from premature birth and congenital debility, are noted as important factors in the infant mortality rate.

The milk supply comes from 10,063 cows on 239 dairy farms in 28 counties within the state. All herds have been tuberculin tested and reacting animals removed. The average score of dairies at the end of the year was 81.0. This entire report has been carefully prepared and contains many interesting statistical tables with descriptive text.

Maternal Mortality—Dr. Samuel J. Crumbine made several pertinent statements on January 3 at Battle Creek while addressing the Third Race Betterment Conference on "Has Maternal Mortality any Significance in Race Deterioration?"

Based upon figures representing the 39 states included in the U. S. Death Registration Area in 1924, it was found that in 33 states, maternal deaths were second in importance only to tuberculosis as a cause of death among women 15 to 44 years of age. In one state, maternal deaths shared second place with heart disease. In 4 states, maternal deaths formed the leading cause of death of women 15 to 44 years of age.

Since the ultimate consequences of maternal deaths are measured in their effect on the lives of surviving children and since an average of two children survive each maternal death, the annual loss of women from maternal causes is doubled if its effect on the future of their children is considered. The maternal death is also a forerunner of a high infant mortality and, likewise, finds expression in its social effect by increasing child delinquency. Maternal deaths are a chief disrupting factor in family life, and the state, which depends for its solidarity on the preservation of the family, must recognize the care of mothers as its chief responsibility.

Diphtheria Prevention—The November issue of *Public Health News* published by the New Jersey State Department of Health discloses the fact that diphtheria was more prevalent in the State of New Jersey during the first 9 months of 1927 than it was during the corresponding period of the preceding year, there being 3748 cases reported for the 1927 period, and 2557 cases for the first 9 months of 1926.

This issue of *Public Health News* contains a very timely and complete description of active immunization against diphtheria, and detailed description of the organization and maintenance of diphtheria prevention clinics.

LABORATORY

C. C. YOUNG

MEDIA FOR MILK COUNTS

JOHN F. NORTON, Ph.D. FELLOW A. P. H. A.

University of Chicago, Chicago, Ill.

THE fifth edition of *Standard Methods of Milk Analysis* (1927) specifies a "standard beef extract agar" for use in the standard plate count for the number of bacteria in milk. These methods also approve the use of dehydrated media. It is fully recognized that the specifications for the beef extract agar medium are not so exacting that two laboratories will prepare exactly the same material from a standpoint of bacterial nutrition. Indeed, it is probable that different batches made in the same laboratory will not be entirely uniform in chemical composition. The particular brand of beef extract or peptone or agar used will determine this composition and the rather lenient pH range will also affect the number of colonies appearing on an agar plate under the specified standard conditions. It must also be remembered that no medium will give the true bacterial count. Nevertheless, it is believed that with careful technic the "standard beef extract agar" is a practical medium for use in laboratory control tests for milk supplies.

However, no standard procedure should be regarded as giving a final answer to any laboratory method. It is perfectly proper to question the validity of such a standard and to attempt to improve upon it. It is fairly safe to predict that changes will sometime be made in the present standard medium. It is also possible that an entirely different medium may be devised that will give better results. The ideal medium for the counting of viable bacteria in milk is one which is simple and cheap to prepare; will contain ingredients of uniform and known chemical composition so that the composition of the medium at time of use will not be variable; will allow the ready growth and recognition of colonies of bacteria; and will give uniform colony counts. Some of these requirements are interrelated. I have not included a specification that an ideal medium will yield a maximum number of colonies. If uniform results are obtainable, a maximum count would seem to be of minor importance in a control laboratory. If bacterial standards are used they can be set on the basis of the medium employed just as such standards must be devised on the basis of the conditions in the community served.

Since 1915 a number of articles have appeared dealing with the problems above outlined. Berry [1] attempted to modify meat juice-peptone media so as to obtain more favorable growth conditions and at the same time lessen the cost. She found that with the standard medium recommended at that time, dilution of the medium up to about 1-8 actually increased the number of colonies appearing and that a dilution of 1-12 gave about the same count as the original medium. Sherman [2] showed that more and larger colonies could be obtained when lactose was added to the nutrient agar medium. Sears and Case [3] maintained that the standard medium then in vogue was deficient in nutrient material

and advocated the use of sterile milk for dilution blanks to furnish supplementary food. Ayers and Mudge [4] have suggested a milk powder medium on which are obtained relatively high counts, large colonies and some bacterial type differentiation. Supplee, Whiting and Downs [5] made a rather extensive study of variations in milk counts as affected by the medium used and by the incubating temperatures. They advocated the use of dextrose agar at 37°C. Parker and Byers,[6] Supplee and Ashbaugh,[7] and Zoller [8] have confirmed the claims of Ayers and Mudge for the milk powder medium. Frobisher [9] has compared the results obtained with standard agar, lactose agar, milk powder agar, milk powder agar with yeast and milk powder agar with 1 per cent lactose. All of the enriched media gave higher total counts and larger colonies than the standard agar. He appeared to favor lactose agar as the most suitable medium. Norton and Seymour [10] compared the counts on five different media—"standard" meat extract agar, meat infusion agar, dehydrated meat extract agar, dehydrated peptonized milk agar, and Ayers' milk powder agar. They obtained somewhat higher colony counts on the two latter media than on "standard" or meat infusion agar. The dehydrated nutrient agar was intermediate. However, the coefficients of variation indicated that somewhat more uniform counts were obtained with the "standard" and meat infusion media which in the authors' opinion served to offset the more easily counted plates obtained with media containing milk.

The ideal medium for obtaining the bacterial count of samples of raw or pasteurized milk has not been devised. Valid criticisms have been made of every medium so far suggested. It seems to the writer that we know too little of the fundamental chemical properties of our media. We must study these more intensively than has yet been done. Peptone is a common ingredient of our media. How can we expect to obtain uniform results from a variety of peptones? This situation has been recognized and is being attacked. But if this difficulty is solved still others remain. A more accurate knowledge of the fundamentals of bacterial nutrition is the only final solution.

REFERENCES

1. Berry. *Collected Studies*, Bureau of Laboratories, New York City, Vol. 8, 1915.
2. Sherman, J. M., *J. Bact.* 1:481, 1916.
3. Sears, H. J., and Case, L. L. *J. Bact.*, 3:531, 1918.
4. Ayers, S. H. and Mudge, C. S. *J. Bact.*, 5:565, 1920.
5. Supplee, Whiting and Downs. Cornell Univ. *Agri. Exper. Sta., Mem.* 43:221, 1921.
6. Parker and Byers. *Tenth Ann. Rep. Intern. Assn. Dairy and Milk Inspectors*, 1921, p. 46.
7. Supplee and Ashbaugh. *J. Dairy Sci.*, 5:216, 1922.
8. Zoller, H. F. *A. J. P. H.*, 13:384, 1923.
9. Frobisher, M., *A. J. P. H.*, 13:474, 1923.
10. Norton, J. F. and Seymour, M. *A. J. P. H.*, 16:35, 1926.

A SATISFACTORY METHOD OF STAINING BLOOD SLIDES FOR MALARIA

WM. KRAUSS, M.D.,
Memphis, Tenn.

THE slides coming into public health laboratories for examination for malaria parasites are usually rather unsatisfactory and often quite unfit for examination by the ordinary Wright method.

I have encouraged my doctors to make rather thick smears, spreading the blood with one slide upon the other, "like butter upon bread." Such smears are just distinctly red and correspond to the thicker portion of very bad smears.

The slides are fixed in methyl alcohol containing 1 per cent official hydrochloric acid for 3 to 5 minutes. They are

then rinsed under the tap and further washed in a staining dish in running water for 10 minutes.

They are then stained by immersion in a Coplin jar as follows:

(a) 1 c.c. Wright stain
2 c.c. Methyl alcohol
Distilled water sufficient to make 50 c.c.

Mix the stain and alcohol and pour into the water. Leave in the stain for 15 minutes and rinse in tap water.

(b) Giemsa Method:
1.5 to 2 c.c. Giemsa stain
50 c.c. Distilled water

Pour the Giemsa into the water. Stain the slides for 30 minutes.

(c) Have on hand:
1. 1% aqueous solution Eosin W.g.
2. 1% aqueous solution Azur No. 11 (Gruebler)

To 50 c.c. distilled water add 1 c.c. solution No. 1. Stir well, then add 2 c.c. solution No. 2; stir and pour into the Coplin jar containing the slides. Stain for 15 minutes.

These three formulae permit a choice of the stain to which one is accustomed. The advantage of the last named one is that the stain never "goes bad."

One batch of slides will exhaust either of these staining solutions.

Single slides may be stained face down in a Petri dish, supported on a match, in a quantity of stain sufficient for the purpose.

With some practice one can examine these acid-fixed slides in half the time required for the ordinary method. The proportion of positive finds will be materially higher.

The acid fixation is not so desirable for the regulation thick film of Ross as the original Ross Method modified by Schilling and Barber. However, the film is less likely to peel off. The objection is that the background of coagulated albumin prevents a clear view of the parasites. This objection does not apply to the thinner or intermediate smears.

VITAL STATISTICS

LOUIS I. DUBLIN, PH. D.

Longevity of the Presidents—Although the number of lives studied is entirely too small for positive statistical analysis there seems to be sufficient evidence to conclude that the duties of the presidency have shortened the lives of the presidents since the Civil War. The average age at inauguration of the 29 presidents was 54.31 years, Theodore Roosevelt at 42 being the youngest and William Henry Harrison at 68 the oldest. The average age at death of the 27 presidents who have died is 68.41 years and our one living ex-president, Chief Justice Taft is now 70. The average age at death of the 15 presidents of the pre-Civil War era, from Washington to Buchanan was 73.8 years whereas that of the 12 deceased presidents of the post-Civil-War period was only 61.7 years.

According to life tables the combined expectation of life of the 15 presidents of the pre-Civil-War period at accession was 229.65 years. They actually lived 250.02 or 20.37 years in excess of the expected. The combined expectation of life on assumption of office of the 12 deceased presidents from Lincoln to Harding was 228.81 years but they lived only 123.12 years or 105.69 years less than their normal expectancy. If the life expectancy of Coolidge and Taft should be fulfilled, the years actually lived by the post-Civil-War presidents would be

104.08 or still 105.69 years below the expected and the average life tenure of the 14 since they assumed office would be 7.55 years below the expected as compared with 1.35 years above the expected for the 15 presidents prior to the Civil War. Of the 15 pre-Civil-War presidents, 9 exceeded their life expectations at accession, but of the 12 deceased presidents since 1861 only Grover Cleveland lived beyond his normal expectancy by 1.3 years. Even if the 3 presidents, Lincoln, Garfield and McKinley, who were assassinated since 1861 had lived out their life expectations the post-Civil-War presidents would still fall far short of living as long as expected at the ages at which they were inaugurated.—*Stat. Bull.* Met. Life Ins. Co. 8:2 (Dec.), 1927.

The Principal Causes of Death in 1926—The Department of Commerce reports a slight increase in the 1926 death rate for the death registration area of the United States, which comprises 89.8 per cent of the estimated population of the country. The death rate in 1926 was 12.2 per 1,000 population as against 11.8 in 1925.

Heart disease continued to increase and the death rate rose from 185.5 in 1925 to 199.1 in 1926. Pneumonia and influenza recorded large increases from 93.5 in 1925 to 102.5 in 1926 and 29.6 in 1925 to 40.7 in 1926 respectively. The death rates in 1925 from nephritis (96.3), cancer (92.6) and tuberculosis (86.6) rose in 1926 to 98.3, 94.9, and 87.1 respectively. Diabetes increased from 16.9 in 1925 to 18.0 in 1926, measles from 2.3 in 1925 to 8.2 in 1926 and whooping cough from 6.7 to 8.9. Deaths from accidental causes increased slightly, from 78.3 to 78.6, while deaths from automobile accidents rose from 17.0 to 17.9 and suicides from 12.1 to 12.8.

The principal decreases in rates were from diarrhea and enteritis under 2 years which fell from 31.5 to 27.0 and typhoid and paratyphoid fever from 8.0 to 6.5 per 100,000 population.—*Department of Commerce Preliminary Report.* Dec. 30, 1927.

Diphtheria and Scarlet Fever in Rio de Janeiro—A study of 520 Brazilian children and adolescents showed only 0.8 per cent with a past history of diphtheria and 0.6 with a history of scarlet fever. In North American surveys these percentages varied from 7.5 to 15 for diphtheria and from 8 to 27 for scarlet fever. The large number of negative Schick and Dick tests in Rio de Janeiro, however, indicates that sub-clinical infection with diphtheria bacillus and *Streptococcus scarlatinae* must be more common there than in cities of the United States, where the case rate from these diseases is much higher. A clinical case of either of these diseases in that city, therefore, might be regarded as an accident in the immunization process due to particular susceptibility of the individual, an unusually massive infection or temporarily increased pathogenicity of the microörganism.

Brazilian children seem to develop immunity especially to the streptococcus toxin at an earlier age and to a greater extent than do children in New York City. The very high percentage of negative Dick tests among children, particularly in orphanages, strongly suggests an exceptional racial capacity to develop immunity to scarlet fever. This theory is strengthened by the fact that there has not been any appreciable mortality from scarlet fever since 1880.—James A. Doull, Manoel J. Ferreira and Decio Parreiras. *J. Prev. Med.* 1:513-527 (Nov.), 1927.

Common Infectious Diseases in Brazil—The results of this study confirm the observations from other studies that scarlet fever is rare and diphtheria quite infrequent in the tropics. Only 3

of 519 persons between 8 and 20 years of age stated that they had ever had scarlet fever, and 4 of 521 had diphtheria. Of 266 over 20 years, 6 had had diphtheria and 4 of 319 had scarlet fever. All of these having a history of scarlet fever came from the southern and less tropical sections of Brazil. The diphtheria mortality rate in 1920 and 1921 in Rio de Janeiro was 5.3 and in the same two years there were only 6 deaths from scarlet fever. In Sao Paulo, 50 miles south of Rio de Janeiro, and having a cooler climate, the death rate in 1920 was 12.2 for diphtheria and 10.6 for scarlet fever. In 1918 the scarlet fever death rate rose from 5 to 23 but dropped to 0.5 by 1923.

Measles, mumps, whooping cough, and chicken pox, however, seem to be about as common in Brazil as in North America. The mortality from measles in Rio de Janeiro, 1917-1923, averaged 25.5 per 100,000 population, rising to 51.9 in 1925. The whooping cough mortality in Rio de Janeiro in 1917 to 1923 was 22.1. Sao Paulo in the same period had rates averaging 8.3 for whooping cough and 13.7 for measles.—James A. Doull, Manoel J. Ferreira and Decio Parreiras. *J. Prev. Med.* 1:503-512 (Nov.), 1927.

Infantile Paralysis in Haverhill—The infantile paralysis epidemic in Haverhill, Mass., with a case rate of 2.2 per 1,000 population exceeded the previous maximum incidence rate of 1.8 in New York in 1916 and of 1925 in New Zealand and Iceland. At the waning of the epidemic in the last of October, 105 cases with 15 deaths had been reported. About 1 out of every 70 of the 4,000 children of preschool age had the disease and 7 deaths occurred in this group. There were 45 cases and 8 deaths among the 12,000 children of school age. The state report shows that up to the last of October, 908 cases had occurred, so that Haverhill has had about 10 per cent of the total cases reported for the entire state.

The records of the Board of Health show that in the 17 previous years there have been 172 cases and 29 deaths from the disease in Haverhill. One hundred and thirty-three of these cases occurred in cycle years of 1913-1914, 1916-1917 and 1920-1921. Since 1910, 42 or about 25 per cent of the cases occurred among children in Ward 5, in 1917 this percentage increased to 70 while 60 of the 104 cases of the present year occurred in the same ward. Thirty-nine of the 60 patients in Ward 5 were of French ancestry, and 12 of the 15 deaths in the city occurred in this ward, all of them being of French-Canadian descent, and still another death was also in a family of French ancestry.

The average age of the children with the disease was 5 years and 8 months, approximately the same as the average age of previous epidemics. The deaths by ages were: one 10 months, one 2 years, three 4 years, two 5 years, two 7 years, four 8 years and two 16 years. The illness of these 15 cases before death varied from 3 to 12 days.

There were 25 cases in Ipswich, a town of about 6,050 population 14 miles from Haverhill. This incidence rate of 4 per 1,000 is the highest ever known.—George T. Lennon. *Boston M. & S. J.* 197:916-920 (Nov. 17), 1927.

Public Health in Madras—The population of Madras is about 40 millions and is steadily increasing despite the fact that the death rate in 1926 was 24 and the infant mortality 189 per 1,000. There were 24,407 deaths from cholera, 10,457 from smallpox, 2,143 from plague, 91,758 from dysentery and diarrhea, and 337,945 from fevers. Only about 55 mothers per 1,000 receive skilled attention during labor, and this partly accounts for the large number of deaths, 7,142, from diseases connected with childbirth.—*Pub. Health* 41:37-38. (Nov.), 1927.

PUBLIC HEALTH ENGINEERING

ARTHUR P. MILLER, C. E.

RECENT PROGRESS IN REFUSE COLLECTION AND DISPOSAL*

THERE has been comparatively little noteworthy development in the field of garbage and refuse collection and disposal during the past year. Such projects as are of general interest are briefly summarized herewith.

Birmingham, Ala.—In November, 1926, Birmingham awarded a contract for three incinerators with capacities of 60, 90 and 180 tons per 24 hours. The contract entered into amounted to $352,800. The plants are being built by C. O. Bartlett and Snow Company and are of the top charged, outside storage, high temperature type, with forced draft.

Los Angeles, Calif.—The construction of an incinerator of 800 tons per 24 hours capacity at a cost of $370,000 was completed in 1927 for the city of Los Angeles by the Nye Odorless Incinerator Company. The furnaces are of the beehive type connected to a common flue. The capacity is guaranteed when burning 65 per cent by weight of garbage and 35 per cent by weight of rubbish. It is understood that the garbage consists chiefly of market refuse.

Buffalo, N. Y.—A refuse incinerator having a capacity of 500 tons per 24 hours has been almost finished for the City of Buffalo by the Hiler Engineering Company of New York. The furnaces are of the outside storage, top charged, high temperature type.

Indianapolis, Ind.—The garbage reduction plant at Indianapolis has been put into operation during the last month or two. This plant comprises apparatus for reducing the garbage to grease, stock food, tankage, etc. A noteworthy feature is the production of stock food which appears to have a first rate market for feeding hogs and chickens.

A plant of different type but producing also a stock food has been operating during the year at Kansas City.

In closing, it is suggested that those interested should read an article published in *Industrial and Engineering Chemistry* for May, 1927 by Harrison E. Howe of Washington, D. C., entitled, "Progress in Garbage Reduction."

SAMUEL A. GREELEY, *Chairman*
M. N. BAKER
C. A. HOLMQUIST
JOHN H. GREGORY
E. D. RICH

* Report of the Committee, presented to the Public Health Engineering Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 19, 1927.

Sewage Disposal in 1927—This is a discussion of sewage disposal, with special reference to English practice. Land irrigation is probably the soundest method of purification where soil and subsoil conditions are suitable, and the volume of sewage to be treated is well within the purifying capacity of the area available—1 acre per 100 contributing population. Contact beds are not considered a sound economical method of freeing sewage from its tendency to putrefy. Percolating filters are popular and deservedly so. The initial cost is higher than for an activated sludge plant but maintenance and operating

costs are lower. Compared with an activated sludge plant a percolating filter installation may be called "foolproof," and its bacterial population is wonderfully adaptable to varying conditions, including change of temperature and character of sewage to be treated. The activated sludge process is not so popular as it was, probably as a result of "the untoward zeal of some of its advocates and their belated consciousness of its limitations." It has been proved to be scientifically sound and its suitability for certain kinds of work is unchallenged; but it is not suitable for the treatment of all kinds of sewage, nor is it economically adaptable to all situations. Its successful application requires more knowledge and skilful management and it is not, generally speaking, so reliable under all circumstances as the older and better tried methods. Lagooning is the most popular method of sludge disposal. The Imhoff tank has not found favor in England.—J. D. Watson. *Surveyor,* 72:5 (July 1), 1927. Abstr. R. E. Thompson.

Practical Swimming Pool Sanitation Control—Detroit's 37 pools represent all types, from old fill and draw to modernly equipped pools with recirculating pumps, hair strainers, sand filters and sterilization. Only two are outdoor pools.

Inspections are made every 2nd and 3rd day and water samples taken. Bacterial standards are: (1) A median monthly total count of not over 2000 per c.c.; (2) not over 50 per cent of samples in any month shall show presence of *B. coli;* (3) not over 20 per cent of samples in a given month shall show a colon count of over 10 per 100 c.c.

The publication of the standing of the pools has been an incentive to meet the requirements.

It does not require modern equipment to stand well upon the list as to sanitation. The personnel has much to do with results obtained. Good coöperation is obtained from those in charge of the swimming pools.—W. H. Cary, Jr. *Nation's Health,* 9:16 (May 15), 1927. Abstr. L. M. Fisher.

Some Recent Experiments in Fly Control—The experience of the U. S. Bureau of Dairying in controlling flies on an experimental farm at Beltsville, Md., during the year 1924 and 1925, is given in detail. House flies which prefer horse manure as a breeding place but breed readily in cow manure, and stable flies which prefer damp straw or hay on which to lay eggs but will readily lay eggs upon straw mixed with manure, had always been numerous.

In order to control breeding, all manure was hauled away at least once each week and box stalls in which considerable straw was used, were cleaned and the floors scraped regularly. The manure was either spread on fields or placed in large piles one-half mile from the buildings. Failure to remove manure on time resulted in a marked increase in flies. The author holds that the elimination of breeding places is the greatest factor in fly control.

Fly traps were also used in this work due to inability to eliminate all breeding places on the property and to the presence of breeding places on neighboring farms. In discussion it was brought out that experiments in liberating marked flies by the U. S. Department of Agriculture at Dallas, Tex., showed that the house fly traveled 11 miles in 4 to 7 days, and some were caught as much as 17 miles from the point of liberation. The length of flight indicates the necessity for using traps in addition to controlling local breeding places. Ten cylindrical fly traps similar to those described in the U. S. Department of Agriculture *Farmer's Bulletin No. 734* were used in scattered positions. They were baited with blackstrap molasses from sugar cane, diluted with 3 or 4 parts of water which, when it fermented, drew

flies in large numbers. Bait was replenished about once a week. The effect of the traps could be noticed after about 10 days use during August when flies were numerous. During 1925 the 10 traps caught 86 gallons of flies estimated by making counts to run 50,000 or 60,000 flies to the gallon.

As an added protection against flies entering the milk room, a 30-inch electric fan was attached to the porch ceiling causing a slight air current against the screen door which proved very effective in keeping flies off the screen door and porch.

To protect cattle from horn and stable flies, a spray made by soaking one pound of partially opened dried pyrethrum flowers (purchased in 20 lb. lots) in two gallons of kerosene oil for 48 hours was used. This is a killing spray rather than a repellent. It cost from 35 to 40 cents per gallon. It was applied by air pressure sprayer using a nozzle capable of producing a very fine vapor. Horn flies were quickly killed if caught in a cloud of vapor as they swarmed after the first spray struck them. While horn flies lay their eggs in fresh droppings their number was appreciably reduced after a week of daily spraying. Stable flies were killed by spraying them as they were found sucking blood on the cows' legs. Stable flies were much harder to control, however.

Care should be exercised not to wet the cattle unnecessarily with the spray as the kerosene is irritating. When this spray was used one hour before milking no difficulties were experienced in causing odors or tastes in the milk.

Results of this fly control work are reported as satisfactory. No statement is given as to the total cost of control. There was considerable discussion of this paper.—R. J. Posson. *Proceedings of the 19-20th Conference of Amer. Assn. of Medical Milk Commissions and Certified Milk Producers Assn. of America.* pp. 322-327. Abstr. W. D. Tiedeman.

Distribution of Cellulose in Imhoff Tanks—This is a preliminary report on the cellulose content and distribution in fresh sewage solids of an Imhoff tank at Plainfield, N. J. The solids were collected by suspending pails for 24 hours in the flowing through compartment at the inlet, middle portion and outlet. Samples from each point and from the mixture of the three portions were analyzed. A table is given showing results of solids concentration, volatile matter and cellulose content. A selective settling is indicated and, in view of the relation of cellulose to CO_2 production, the efficiency of the tank would be greatly affected by the design and the opportunity for reversal of flow.—H. Heukelekian. *Pub. Works,* 58:133 (Apr.), 1927. Abstr. A. S. Bedell.

Great Advances in Water Softening—This article contains an excellent summary of modern ideas and present methods of water softening. It emphasizes advantages and disadvantages and describes such equipment as pneumatic conveyors for the handling of chemicals, continuous lime slaking machines, mechanical agitators for chemical mixing, sludge removal equipment and recarbonization plants. Tentative estimates are also given to compare the cost of zeolite and soda-ash treatment as applied to the Columbus filtration plant. Natural gas and kerosene oil are recommended as the most suitable fuels to be used for the generation of carbon dioxide gas. For large installations producer gas made from coke and then burned to complete combustion is the most economical method. The paper contains the description of such a plant now under construction at Columbus, O. The effects of recarbonization and of the addition of sodium aluminate upon the corrosive properties of a water are also discussed. —Charles P. Hoover. *Water Works Eng.*, 80:991 1019 (July 6), 1927. Abstr. W. L. Havens.

Résumé of Progress in Chlorination—The early history of chlorination is reviewed briefly, and recent developments are discussed in some detail, with special reference to Toronto, Ont. The employment of prechlorination is extending. In Toronto, the cost of operation of the drifting sand plant has been reduced by $150,000 over a period of 4 years by applying chlorine to the raw water instead of alum at such times as the water is physically good. With moderately turbid water, considerable economy can be effected by applying small doses of chlorine and reducing the alum to just sufficient for clarification. The observation that chlorination aids coagulation has been confirmed at Toronto. Other advantages of prechlorination are reduction of filter load in heavily polluted water and increased rates of filtration; and it constitutes an additional safeguard in the treatment of water subject to rapid changes in quality. Chlorine is being increasingly employed for destruction and prevention of algal growths in filter underdrains and sedimentation basins. Applications of excess chlorine and, subsequently, copper sulfate, were ineffective for reducing the loss of head which rapidly increases in slow sand filters at Toronto during a 2-months period each spring. The recently inaugurated super-and de-chlorination treatment for prevention of taste at Toronto is outlined and discussed.—Norman J. Howard. *Canad. Eng.*, 52:116 (Mar. 8), 1927. Abstr. R. E. Thompson.

A Study of Refuse Collection and Disposal in Sydney, Australia—The article is an abstract of Mr. Newman's comprehensive report on the subject. The refuse burnt in the destructors in Sydney is of three types, household refuse, early morning refuse and trade refuse. Household refuse represents 60 per cent of the total and consists of garbage, dirt, ashes, tins and paper, weighing 750-800 lbs. per cu. yd. "Early morning refuse" is coined to describe the refuse collected between 6:30 and 8:30 a. m., intermediate in composition between household and trade refuse, consisting of shop, office, cafe and hotel refuse, averaging 36 per cent paper and weighing 500 lbs. per cu. yd. Refuse from municipal fish, fruit and vegetable markets is converted by a private company into fertilizer.

Owing to mixed collection, the results of analyses of Sydney refuse differ from those prevailing in America, being 44.7 per cent water, 29.7 per cent combustible, and 25.6 per cent ash, and having a calorific value of 3,007 B. T. U. The recommended method of disposal is separation-incineration, and the specifications for a new destructor should provide that it burn, without additional fuel, mixed refuse containing not over 900 lbs. of water per ton and not less than 800 lbs. of combustibles.—R. K. Newman. *Am. City*, 37:61 (July), 1927. Abstr. A. S. Bedell.

Abbreviated Report of the Government (Holland) Water Supply Bureau for 1925—A short account is given of the rural supply projects inaugurated and in course of inauguration under the bureau's auspices, outlining the many and various difficulties with which such undertakings have to contend. The manifold functions of the bureau include, for example, technical advice on such matters as deferrization and demanganization. The government is keenly alive to the desirability of providing reliable water for the rural population as well as for the urban. In more prosperous times it even participated financially in certain approved projects and even now is prepared to assume in some cases a certain contingent liability. Upon the bureau rests the responsibility of seeing that these rural supply projects are established upon the soundest possible basis, both technically and financially. Activities to this end are summarized un-

der 93 headings. Perhaps the greatest difficulty to be surmounted is that of popularizing the idea of paying for water among the thrifty and independent Dutch. Some of the propaganda work is described. In an appendix, Engineer Markus of the bureau lists for 94 Dutch waters the hardness as deduced by the application of certain formulae from the electrical conductivity and the hardness as found by analysis. Agreement is moderately satisfactory.—*Verslagen En Mededeelingen Betreffende De Volksgezondheid*, 7:649 (July), 1926. Abstr. Frank Hannan.

Sewage Plant Records—This is a discussion of the purpose of the plant records and explanations of kinds of data worthy of recording. Purpose fourfold to show: plant efficiency plant effectiveness, line of defense against unjust criticism, adequate information for plant improvement. Data needed include: number and kind of connections, continuous meter records of flow at outfalls, oxygen demand by methylene blue test, suspended solids, and pH determinations at various points of treatments. Determination of ammonias yields little information of value. Illustration is given of value of records in showing need of plant enlargement where metering had cut down per capita water consumption 20 per cent and population had increased 40 per cent. A method is given in detail for converting from plant data giving "suspended solids retained" to amount of sludge to be moved.—John R. Downes. *Water Works* 66:335 (Aug.), 1927. Abstr. W. R. Schreiner.

Some Problems of Seaside Health Resorts—The author discusses in a somewhat pessimistic but none the less candid manner the numerous problems confronting the governing authorities of a seaside resort.

Sewage and refuse disposal, particularly present difficulties not encountered at inland or all-year-round communities. In order to be successful in so far as attraction and popularity are concerned, the psychological aspect of the summer visitor must be considered. In the matter of the sewer line extension and outfall, and the avoidance of any hint of even storm water deposits near the beaches, as well as too frequent refuse collection in order to cater to the esthetic rather than the practical, considerable unnecessary expense is involved.

The widely varying conditions of the summer season and the "off-season" cause problems of housing and unemployment seldom encountered elsewhere.

Other features discussed, but not directly concerning the public health, are local attractions, development of sea front, the economics of bathing pool operation and bathing privileges, tennis courts and golf courses, storm shelters and comfort stations and finally the highway and motor car problem.—Leslie Roseveare. *Surveyor* 71:625 (June 24), 1927. Abstr. H. N. Old.

Camels and Plague—The method of transmission of plague from the Orient along caravan routes to Europe has long been unexplained. In connection with a study of 4 plague cases in Astrakhan, obviously caused by ingesting salt meat from a dead camel, the camel was suspected as being part of the chain of transmission.

Plague cultures inoculated into 4 camels produced typical plague. It was also produced by feeding the animals green plants dipped in plague cultures. Infected camels might easily contaminate the fodder to be eaten by others and in that way spread the line of infected animals over long distances. At the European end of the line, and since the ingestion of the flesh of dead animals may produce disease, the way rodents might be infected can readily be seen. *Centralbl. f. Bakteriol.*, 98:24, 1926; *Nation's Health* 9:58 (Apr. 15), 1927.

INDUSTRIAL HYGIENE

EMERY R. HAYHURST, M.D. AND LEONARD GREENBURG, PH.D.

Experimental Studies On the Effect of Ethyl Gasoline and Its Combustion Products—This bulletin of 447 pages including 105 pages of appendix is replete with tables, graphs, and illustrations to complete the text of the extensive studies made at the Pittsburgh Experiment Station of the U. S. Bureau of Mines extending from December 6, 1923, to August, 1925. Part I concerns the psysiological effect of exhaust gases from engines using ethyl gasoline. Part II, the effects of inhalation of unburned vapors from ethyl gasoline and other motor fuels (gasoline-benzol mixtures, straight benzol vapors and various combinations of ethyl gasoline with these). Part III, deals with skin absorption experiments with ethyl gasoline, 50-50 benzol-gasoline blend, benzol, and benzene (c.p.). In this part are also considered inhalation experiments with animals treated with ethyl gasoline and with other mixtures and chemicals above stated. The following are abstracted from the general summary and findings of investigations which appear on pages 14-28:

Part I. Physiological Effects of Exhaust Gases from Engines Using Ethyl Gasoline

Campaign 1. Tests Conducted with Gasoline Containing the Commercial Amount of Ethyl Fluid

1. Duration of exposure—December 6, 1923, to July 26, 1924.

7. Storage of lead by animals—No distinct storage of lead was found in the animals exposed during Campaign 1. With only two exceptions the results of analysis were similar to those obtained from control animals. The exceptions were a 6-hour exposure rabbit and a 6-hour exposure guinea pig in which the lead found was 0.190 and 0.094 mg. per 100 g. of body weight, respectively.

8. Pathology—No distinct pathological lesions attributable to lead poisoning were found.

9. Hematology—No anemia, change in red- or white-cell counts was noted, nor was there any increase in polychromatophilia or punctate basophilia, other than that found in control animals of like species.

10. Symptoms—From the observations made it appears that the exposure to lead during Campaign 1 was not productive of the characteristic symptoms of lead poisoning. The only symptoms exhibited were those of intercurrent disease and were impartially distributed among control, 3-hour, and 6-hour exposure groups, and without dependence on the total period of exposure. With the above exception the animals were healthy, lively, and had good appetites.

12. Manifestation of effects—The effects of exposure to the concentrations of lead prevailing in the air during this campaign were not manifested by the storage of lead, pathology, hematology, symptoms, weight and growth of the animals exposed.

Campaign 2—Tests Conducted with Gasoline Containing Five Times the Commercial Concentration of Lead Tetraethyl

20. Concentration—It appears that the conditions under which the animals were exposed is close to the threshold concentration for monkeys, dogs, rabbits, and guinea pigs. Some animals of each group showed little or

no storage, while others showed distinct storage though not a comparatively large amount.

27. Tests on men—Tests conducted on men breathing exhaust gases from ethyl gasoline show that on the average, 87 per cent of the inhaled lead dust was again exhaled, leaving only approximately 13 per cent as retained in the lungs and respiratory passages.

Part II.—Effects of Inhaled Ethyl Gasoline Vapor

5. Effect of gasoline on animals—(a) Storage of lead—A number of the animals were examined for storage of lead, and the amounts found were similar to those for unexposed control animals.

(b) Pathology—The general findings in all concentrations were hyperemia of the lungs, granular degeneration of the liver, and granular degeneration of the kidneys which sometimes lead to pitting and scarring, especially in rabbits. . . . .

(c) Hematology—The blood changes were minor and of little significance.

(d) Symptoms—The symptoms were unsteadiness, drowsiness, and moderate watering of nose and eyes due to irritation. These symptoms were not noticeable in the lowest concentration (0.10 per cent vapor) and were marked in the 10 per cent concentration. They disappeared shortly after each exposure.

6. Effects of Ethyl Gasoline and gasoline containing higher concentrations of lead tetraethyl and ethylene dibromide—(a) Storage of lead—Some of the animals exposed to 0.10 per cent ethyl gasoline vapor showed distinct storage of lead. Nearly all guinea pigs exposed to higher concentrations showed storage. Nearly all the monkeys, dogs and rabbits which were exposed to 0.3 per cent ethyl gasoline vapor showed storage of lead.

7. Effects of a mixture of equal parts gasoline and motor benzol—(a) Pathology—The general findings were acute degeneration of the liver and kidneys, anemia of the spleen, congested adrenals and hyperemia of the lungs. An edema of the lungs was found in animals that died after exposure to 1.0 per cent vapors. These findings are similar to those for gasoline alone.

(b) Hematology—No effect on the number of white cells or hemoglobin content was noted. The red cells showed a tendency toward polycythemia.

8. Effect of motor benzol on guinea pigs—(a) Pathology—The general findings were degeneration of liver and kidneys, anemic spleen, congested pancreas and adrenals, congestion of lungs and an edema in animals dying from exposure to 0.3 and 1.0 per cent vapors. These observations are similar to those for gasoline vapor.

(b) Hematology—No leukopenia or anemia were observed. There was a slight increase in the red cells, also a moderate polychromatophilia.

Part III.—Effects of Ethyl Gasoline When Absorbed Through the Skin

1. Materials used—(a) Water; (b) gasoline; (c) ethyl gasoline (1:1300); (d) gasoline containing 10 times the commercial concentration of lead tetraethyl (1:127) and ethylene dibromide; (e) benzol-gasoline blend; (f) motor benzol; and (g) benzene (c.p.) (C_6H_6).

5. Relative effects of absorption—Greater injurious effects were produced on animals when the material applied could gain entrance to the body through the skin, gastrointestinal and respiratory system than by the skin and gastrointestinal tract or through the skin.

When the material applied could gain entrance to the body through skin and gastrointestinal tract, it was slightly more injurious than when limited to skin absorption.

When the material was applied on rats, guinea pigs, and rabbits so that it could be absorbed through the skin, inhaled and ingested, and if the animals were intimately associated the general effect was more or less independent of the size of the dose administered.

10. Animals treated with benzol—(a) Benzol applied in doses of 0.5 c.c. so that it could be absorbed through the skin, inhaled, and ingested, eventually was found to be fatal for rats and 1.0 c.c. for guinea pigs, but rabbits appeared to be able to withstand doses of 1.0 c.c. if they were not complicated by infections. Guinea pigs that received doses of 1.0 c.c. of benzol in such a manner so that it could only be absorbed through the skin apparently were not injured in health.

(b) The general pathological changes found in the animals treated with benzol were an acute parenchymatous degeneration of the liver and kidneys.

(c) The blood picture was that of a slight anemia, which was manifested by an attempt of an increased production of erythrocytes.

(d) The symptoms of the animals treated with benzol were a local skin irritation which healed and became inflamed periodically. The treatments became more irritating as the tests progressed, and produced convulsions in the guinea pigs that received 1.0 c.c. when they had been on test for some time.

(e) All of the animals treated with benzol lost weight during the first few weeks, but this was regained by those that survived this period.—Sayers, Fieldner, Yant and Thomas, *Report of the U. S. Bur. of Mines*, 1927, Washington, D. C.

Health Aspects of the Wood Working Industries—The following paragraphs are abstracted from the summary of this report:

2. In order to determine the prevalence of nasal irritation, asthma, and dermatitis in this group of workers, clinical examinations have been made of 208 persons employed in thirteen Melbourne joinery and furniture factories, and ten other wood-working employes have also been examined in respect to their dermatological condition.

3. It was found that 78 employes, or 37 per cent, of all factory examinees, presented departures from normal as regards their nasal condition. Of these 27, or 13 per cent, had abnormalities of the nose and throat, which were antecedent to occupation in the wood-working industry. . . . It has also been shown that employes in the age group under 21 were least affected, and that no person engaged less than two years in the wood industry evidenced nasal trouble. . . .

Wood machinists were found to show the greatest percentage affected in all the occupational groups, no fewer than 40 per cent having nasal trouble due to dust inhalation. . . .

4. In 113 persons, an aural examination was made, and abnormalities were recorded in 38, or 34 per cent, of the examinees. . . .

7. Only 1 person, of the 208 examinees, or 0.5 per cent, was found to be suffering from a dermatitis definitely due to a wood-working occupation. In this case, blackwood was the responsible agent. From other sources, 10 further cases were found, one of urticaria, probably occupational, and 9 of dermatitis. . . .

Recommendations—

1. In view of the large percentage of wood-workers found affected with nasal trouble definitely due to the inhalation of wood dust, it is strongly urged that these workers be adequately protected by the installation of an effective exhaust on each wood-working machine, so that the quantity of

wood dust liberated into the air of the workroom be minimized as far as possible.

2. Susceptible persons suffering from a dermatitis due to working with blackwood or other timbers cannot reasonably expect to be cured without cessation of this work, and removal from exposure to the cause of their dermatitis. It is recommended that this question be taken into serious consideration with the object of providing in some effective way for the small number of persons with this peculiar susceptibility.—D. G. Robertson, *Health*, Commonwealth of Australia, V, 5:150-151 (Sept.), 1927.

Health Survey of the Printing Trades, 1922 to 1925—The present survey concerns itself with approximately 300,000 workers engaged in the printing trades during the years 1922-1925. The information was obtained by means of a questionnaire sent to printing plants throughout the United States and Canada. The number of replies received was 2,000, representing 47 states, District of Columbia and certain portions of Canada. The survey revealed the fact that general conditions were found decidedly more satisfactory than had been anticipated. The sickness rate was apparently rather low. Sanitary conditions, evaluated by means of inspections, were found to be for the most part fairly satisfactory with the exception of an insufficiency of floor space and air space in many establishments. These deficiencies were found to be chiefly inherent in old printing plants. The study also revealed the very interesting fact that tuberculosis is no longer a menace of serious proportions in the printing industry, and lead poisoning likewise was found to be much lower than had been anticipated. The physical and medical examination of printing employes revealed the fact that the men were of good normal physique, their measurements corresponding with those of the soldiers discharged at the close of the World War. There appeared to be a rather high incidence of visual defects, and according to Dr. Hoffman these are the result of ill adjusted posture. He says, "printers who are above the average in stature, unless properly provided with suitable seating facilities, may develop spinal curvature, which is fairly common and closely correlated to eye strain and other visual defects."

Dr. Hoffman concludes, "the problem of lead poisoning in the printing industry while always a grave and potential danger is now, at least in fatal form, of minor importance." For the year 1925 the U. S. Bureau of the Census reports only 5 deaths from chronic lead poisoning among some 300,000 printers. He further analyses the question of tuberculosis, and concludes that the decline in tuberculosis among printers employed in printing trades conforms to the observed decline in the population at large. And lastly, he points out that there exists a higher proportion of deaths from cancer among printers at the present time than existed in the past, the proportion of deaths being 4.2 per cent during the years 1912–1918 and 8.2 per cent during the years 1919-1923.

For all of those persons who are interested in the problem of industrial lead poisoning this study provides a large body of very valuable material.—Frederick L. Hoffman, *Bull. No. 427*, U. S. Bureau of Labor Statistics, Washington, Mar., 1927. L. G.

Annual Report of the Surgeon General of the Public Health Service of the United States for the Fiscal Year 1927—The activities of the Office of Industrial Hygiene and Sanitation of the U. S. Public Health Service for the year 1927 are described in some detail in the present report of the Surgeon General. This office, under the direction of Surgeon L. R. Thompson, has conducted

investigations of tetraethyl lead, occupational health hazards, occupational diseases and industrial absenteeism. Cooperation with certain other government departments and with industrial and other agencies has been carried on by this office also. The most noteworthy of the contributions of the Public Health Service along these lines have been the studies on tetraethyl lead which were continued during the past year. Air samples were obtained in the streets of 14 large cities of the United States as well as in certain garages and other industrial establishments. In addition to these, samples of dust were obtained in a similar group of establishments.

The valuable dust studies of the Service have been continued and 4 of the 7 studies have been completed; namely, the cement, granite, hard coal mining, and polishing and buffing of silverware. During the past year the reports on the cement and granite studies have received their final touches and are now in press. These dust studies will undoubtedly prove to be the most detailed and valuable ones made in the United States. It would appear that every aspect of the problem of dust inhalation has received careful and detailed consideration in these studies.

The Office of Industrial Hygiene of the U. S. Public Health Service has been interested in the problem of illumination for some time, and during the past year, in order to study the problem of distribution to daylight within factories and schoolrooms, an experimental illumination cabinet in the form of a building 30 feet square and about 16 feet high has been constructed in Arlington County, Va. Window space, ceiling height and floor area may be altered at will, and it is proposed by means of illumination readings continued throughout the year to obtain fundamental data on the distribution of natural illumination in buildings.

The Service is becoming more interested in the problem of smoke pollution of the atmosphere and the loss of light due to smoke, and in order to study this latter problem daylight illumination recorders were installed, one on the lower end of Manhattan Island where the air is heavily polluted and one on one of the buildings on Hoffman Island where the air is comparatively free from dust and smoke. So far but 2 months' records are available but these show a large absorption of light by the atmospheric pollution depending upon the time of day and sky conditions.

The Service has published a very valuable paper on the problem of posture, and an exceedingly valuable bibliography on the literature on this subject has been published in *Public Health Reports*.

Studies on occupational dermatoses, pneumonia among steel workers, industrial absenteeism, illumination in post offices, and coöperation with the Bureau of Standards and the Bureau of Mines have been continued throughout the year. For more detailed information concerning the results of many of these studies the reader is referred to the present report and various papers which have been issued during the past year either in the reports of the U. S. Public Health Service or as bulletins of this office.—Government Printing Office, Washington, 1927. L. G.

FOOD, DRUGS AND NUTRITION

WALTER S. FRISBIE

Studies **On the Effects of Abundant Cereal Intake**—Cereals ordinarily used in the household and supplements readily obtainable at the grocery store were fed in combination to experimental albino rats in order to determine the efficacy of cereal supplements other than milk or milk products. The cereals represented were oats, wheat and corn—three different diets in which the cereal was present in amounts of 65 per cent, 80 per cent and 93 per cent respectively. Oatmeal, whole wheat and yellow corn meal represented the cereals. The supplements were whole egg (substituted by egg yolk in the 93 per cent diet), molasses and fresh lettuce. Oatmeal and whole wheat diets furnished the best growth in the 65 per cent series, with yellow corn meal almost as satisfactory, the growth in all cases being better than the conventional "normal." In the 80 per cent series the growth was good to excellent, limited somewhat by the protein content of the ration, the corn meal being again not so satisfactory as oatmeal or whole wheat. In the 93 per cent diet in all cases the growth was barely equal to normal; in the case of yellow corn meal it was below, probably due to low concentration of protein. No signs of rickets were observed, nor any evidence of faulty dentition or vitamin deficiency. In breeding fifteen females on the 80 per cent cereal ration, one only failed to have a litter. The growth rate of the young of these females indicates that the rations satisfactory for growth after the weaning period, are not entirely sufficient for the period of lactation, many of the young being markedly underweight at the time of weaning. The authors conclude that while the 65 per cent series indicates satisfactory growth, reproduction and lactation, with supplements other than milk, and that growth may be maintained with the 80 per cent level of cereal intake, the experiments are not sufficiently extended in view of the number of substitutes available to determine any general opinion. In all the experiments the cereal rations were cooked before feeding. Comment is made that the ability of man to maintain growth on a large cereal diet is indicated by the Chinese, in whose diet, according to Wu, cereal constitutes 66 to 72 per cent of the calory intake. According to the same authority, this diet is considered adequate except with respect to calcium and milk is as a rule not available as a supplement to the cereal.—George R. Cowgill, Margaret H. Jones, Robert A. Frisch, and G. P. Jackson, *J. A. M. A.* 89:1930 (Dec. 3), 1927.

Study of Tubercle Bacilli in Milk—Meanwell feels that results obtained with artificial cultures of the tubercle bacillus ought not to be accepted as criteria of those which would be obtained with naturally infected milk. Therefore, all his studies were made on milk proved to contain tubercle bacilli by animal experimentation. A temperature of 62.8°C. (145°F.) for thirty minutes does not invariably kill the tubercle bacillus in naturally infected milk, although in most cases this temperature is effective. At a temperature of 60°C. (140°F.) for twenty minutes, tubercle bacilli are in many cases destroyed, but this combination of time and temperature leaves no margin of safety.—L. J. Meanwell, *J. Hyg.*, 26:392 (Oct.), 1927. Abstr., *J. A. M. A.* 89:2072 (Dec. 10), 1927.

Rats and Mice As Disseminators of Typhoid B Bacilli—Organisms of the typhoid B group were found by Friesleben in the feces of large numbers of healthy slaughterhouse animals, but agglutination tests indicated that the types present were not pathogenic to man. Paratyphoid B organisms isolated from the feces of 52 per cent of fifty wild mice and 19 per cent of 100 wild rats, on the contrary, were indistinguishable culturally or serologically from the types pathogenic to man.—M. Friesleben, *Deutsche med. Wchnschr.*, 53:1589 (Sept. 16), 1927. Abstr., *J. A. M. A.* 89:2075 (Dec. 10), 1927.

On the Nutritive Value of Bread—Previous workers have demonstrated the meager vitamin B content of the ordinary white flour with the obvious corollary that white bread is an unsatisfactory article of diet if it constitutes a large portion of the intake as it does in so many families of limited means. Experiments have been recorded by Hartwell presumably confirming the contentions made by others that white bread is satisfactory owing to the vitamin B content of the yeast. The work herein recorded was undertaken to demonstrate the accuracy of statements with respect to the adequacy of white bread and to determine the relative vitamin B content of different portions of the wheat as a result of milling. Experiments were conducted on rats weighing from 70 to 100 g., whose weight and temperature were taken exactly at the same time each week and were kept on a basal ration completely free from vitamin B. In the opinion of these investigators the lowering of the body temperature is a more sensitive indicator of vitamin B deficiency than the weight record, provided the animals are kept in a room at a fairly even and warm temperature. It was found that of all of the products of wheat the germ is richest in vitamin B, equaling, if not excelling, yeast in that respect. Rating the germ as 100 in vitamin B content, then the other products range as follows: middlings 50, bran 33, white flour 0, and yeast 100. It was found impossible to furnish vitamin B sufficient to maintain growth in rats when white flour was used as its sole source. White bread would have to be fed in the proportion of 250-500 per cent of the basal ration, whereas whole meal bread would be satisfactory in amounts from 30-60 per cent of the basal ration and a wheat flour germ bread if constituting 20-40 per cent of the basal ration. It is concluded that the so-called brown breads consisting of considerable bran are not entirely dependable as a source of vitamin B since the so-called "brownness" of the bread is not always proportional to the vitamin B content. It is further argued that the dietary effect of a bread made from a mixture of a patent white flour and the germ is more easily assimilated and furnishes a more adequate supply of vitamin B than the breads made from white flour with a liberal addition of bran. It is suggested that the vitamin B content furnishes a more definite stimulus to peristalsis than does the indigestible bran.—W. Cramer and J. C. Mottram, *Lancet*, 21:1090 (Nov. 19), 1927.

Incidence of Carriers of B. Aertrycke (B. Pestis Caviae) and B. Enteritidis in Wild Rats of San Francisco—Attention is called to the incidence of carriers of food poisoning types of bacteria in wild rats as part of a study of certain factors which may possibly be responsible for food infections and food poisoning outbreaks. In an effort to establish the existence and the incidence of rat typhoid in the rodent population of San Francisco, bacteriological examinations of 775 rats were conducted which revealed 58 rodents infected either with *B. enteritidis* (28 cases) or *B. aertrycke* (30 cases.) At least 2 per cent of the rodents were capable of

shedding highly virulent bacilli. As no rat virus baits had been distributed in the districts from which these animals came it was concluded that the rats were suffering from natural infection. The carrier rate was found to be fairly uniform throughout the city and was 6 per cent in the vicinity of food handling establishments. It is further stated by the authors that it is likely that as San Francisco has a vigilant rat extermination service the conditions encountered there should not be considered as representative of the prevalence of rat typhoid in other large communities.—K. F. Meyer and K. Matsumura, *J. Infect. Dis.* 41:395 (Nov.), 1927.

Effect of Cl. Sporogenes On Toxin Production by Cl. Botulinum—Conflicting statements by various investigators regarding the effect of other organisms on the growth and toxin production of *Cl. botulinum* led to the experiments reported here which were conducted to ascertain the effect of *Cl. sporogenes* on *Cl. botulinum*, grown in vegetable as well as in meat medium. Asparagus, spinach and meat media were used. In every meat tube *Cl. botulinum* liberated sufficient toxin to kill a guinea pig irrespective of the number of *Cl. sporogenes* spores present. The inoculation of an equal or greater number of *Cl. botulinum* with *Cl. sporogenes* in spinach medium produced toxin with but one exception, when only a hundred spores of each were used. In a few cases the introduction of an overwhelming number of *Cl. sporogenes* spores did not prevent the development of toxin. The deleterious influence of *Cl. sporogenes* is most marked in the asparagus medium. In all three mediums the toxin strength is gradually diminished by increasing the number of *Cl. sporogenes*. The metabolic products of *Cl. sporogenes* are probably not injurious to botulinum toxin since the supernatant fluid of a culture of the nontoxic anaerobe, when added to botulinum toxin, did not destroy it. Planted together it is not unlikely that *Cl. sporogenes* and *Cl. botulinum* contend for the same food substance, some of which may be necessary for toxin production, and if *Cl. botulinum* fails in securing it little, if any, toxin is formed. The spore suspensions of *Cl. botulinum* and *Cl. sporogenes* inoculated in varying relative amounts into meat, spinach and asparagus mediums, were incubated for 10 days before testing for the presence of toxin. —E. Wagner Sommer and Kathryn Glunz, *J. Infect. Dis.* 41:442 (Dec.), 1927.

Bacteria Concerned in the Spoilage of Haddock—In studying spoilage of Atlantic Coast haddock, the author, found that the predominating organisms isolated from the slime and muscle of the fish were Gram-positive rods constituting a single individual species in the *subtilis-mesentericus* group which is capable of existing in at least two distinctly different modifications. The hypothesis was advanced that the two forms are an example in the *subtilis-mesentericus* group of the rough-and-smooth (R and S) type of bacterial variation observed by numerous investigators of other groups of bacteria. Cultural studies were made of 38 strains of the fish organism grown from single-cells, special attention being given to the differentiation of S and R forms. The strains producing smooth colonies (S type) were asporogenous while the rough or "inactive" strains (R type) produced spores, both types breeding true through several successive transfers in broth and agar alternately at 24-hour intervals. It was possible to convert the R type to the S type and vice versa. The "active" form (S type) which was isolated repeatedly from stale fish muscle was assigned a share in the mechanism of spoilage. The organism studied is designated by the author as *B. "mesentericus-vulgatus"*.—A. H. Gee —*J. Infect. Dis.*, 41:355, (Nov.), 1927.

CHILD HYGIENE

MERRILL E. CHAMPION, M.D.

Maternal Mortality in the United States—Twenty nations offer data in regard to maternal mortality rates. Among these the United States ranks 19th, Chile being the only civilized nation that shows a higher death rate from accidents and diseases incident to childbirth. Our rate runs one-third higher than that of England, and Wales and more than twice as high as Denmark, Italy, Japan, Netherlands, New Zealand, and Sweden. Even with allowance for statistical error and varying methods of computing rates, women in the United States are not assured of the safety they have a right to demand and which we should be able to give. There has been no improvement in the last 10 years, the rate being 6.1 per 1000 live births in 1915 and 6.4 in 1925, an increase in fact.

Because of this state of affairs this study was undertaken, the proportionate causes of maternal deaths being first summarized. In the death registration area of the United States during 1921 over 40 per cent of all maternal deaths were due to puerperal septicemia. As this is regarded as a preventable cause this 40 per cent can be wiped out; 27 per cent were due to "puerperal albuminuria and convulsions," which condition is felt by all to be at least partly preventable; 10 per cent were due to instrumental and surgical delivery including Cesarean section; the remaining 23 per cent were due to the so-called accidents of pregnancy which included abortion, ectopic pregnancy, puerperal hemorrhage, embolus, puerperal phlegmasia dolens and "certain ill-defined causes." Dr. Baker studied the midwife question to some extent, and while she did not consider the survey complete, found that the comparative data collected from the various states did not show that the midwife could be held responsible "as a dominant factor in the present high mortality rate", moreover a lessening in the number of births represented by midwives is reported by 22 states.

Hospitalization would seem to be one of the ways in which puerperal septicemia could be decreased but we still fall far short of an adequate number of beds for maternity patients as for all others. Enforced reporting of puerperal septicemia, better obstetrical training in all medical schools, and more facilities for prenatal care, are all considered. Sixteen states have laws making puerperal septicemia reportable but public health authorities have done little with it so far.

Even the best prenatal care will never take the place of skilled obstetrics as Dr. Baker points out, but it has a marked influence in reducing maternal mortality in all city groups where it has been tried out, the rate being cut down from one-half to two-thirds of the figure for the city as a whole.—Josephine Baker, M. D., Dr. P. H., *J. A. M. A.*, Dec. 10, 1927.

Mothers and Babies in New Zealand—New Zealand's *Annual Report* for the year ending March, 1927, states that she still carries the lowest general death rate (not given) and the lowest infant death rate-39.76. The infant death rate has declined slightly in the past year. This decline came in the neonatal period and slight as it gives us some courage. The present neonatal rate is 64 per cent of the total infant death rate, the causes given being prematurity-roughly ½; debility and like causes 1/10; malformations

1/10; birth injuries 1/20. The stillbirth rate has risen steadily 9 points in 5 years, "at the same time as the live-birth rate has consistently declined." (In all considerations of neonatal deaths and stillbirths we have to bear in mind that there are still variations in definition of the term "stillbirth.") Maternal mortality is recorded as 4.25, with an average during the years 1921-1925 nearly one unit above the average. Fifty-seven per cent of the deliveries occurred in hospitals. The average forceps delivery rate for New Zealand hospitals is 14 per cent of all cases delivered.

The department reports plans on foot for new equipment and accomodations in hospital service, a standardized aseptic routine, extended training for midwives, etc. and expects from all a decline in hospital mortality rate as a result.—*Pub. Health*, London, Dec. 1927.

Breast Feeding—Minneapolis puts out an interesting and valuable report on breast feeding. The summary of local factors influencing infant mortality is particularly good. We are somewhat surprised to see included these statements: "In Minneapolis city water need not be boiled to render it safe for babies," and "all milk distributed in Minneapolis is pasteurized or from certified cows," which would seem to indicate that boiling water and milk for babies is considered quite unnecessary in any case. The report does not state how many babies were receiving both bottle and breast feeding but says: "Breast feeding includes all babies receiving any breast milk." Methods being employed in the campaign are discussed. Here, as elsewhere early infant mortality has not been affected. Deaths under 1 month were 57 per cent of the infant deaths for 1926. (Compare 67 per cent for New Zealand.) The author feels that "more and more the application of breast feeding is proving that maternal milk secures for the baby a permanent foundation for a healthy childhood."—Helen Chesley Peck, *Pub. Health Nurse*, Dec., 1927.

Influence of Pregnancy On Teeth—Another interesting contribution to this very important subject is presented in the December issue of the *Dental Cosmos* by Dr. Guttorm Toverud of the State Dental Institute of Norway. This article includes a fine summary of the work that has been done along this line in various countries as well as the results of the author's experiments on rats "to see if pregnancy even under normal nutritional conditions might change the chemical composition of the teeth." The conclusions presented are as follows:

1. Histological and chemical changes are found in bones of pregnant women.
2. Lowering in blood and saliva calcium are found during the latter part of pregnancy.

Both of these conditions may be the result of a faulty calcium metabolism caused by an insufficient intake of calcium, or by a disturbance in the function of some of the endocrine glands. Furthermore, this point of view is supported by:

3. Experimental studies showing that the mother during pregnancy has to give off some of her own calcium from the hard tissues when the intake is insufficient to cover the need of the mother as well as the need of the fetus.
4. The experiments on rats described in this lecture, which show that rats fed a calcium- and vitamin-deficient diet (also containing a toxic factor) during the gestation period developed front teeth of a very inferior chemical composition.

The practical conclusion which may be drawn from this preliminary study is: A liberal intake of lime corresponding to the content of about one liter of milk daily (1.2g. Ca) and a liberal intake of the vitamins necessary for the utilization of the lime, viz., uncooked fruit, green stuffs and milk (and cod liver oil), will be of invaluable help in conserving the teeth of the pregnant mother.—Dr. Guttorm Toverud, *Dental Cosmos*, Dec. 1927

Dental School Clinics in Germany—The Association of German Municipalities recently published in its official organ the results of an investigation into public provision for the care of the teeth of elementary school children in its member cities. The general conclusion is that the cities are giving an increasing amount of attention to this subject.

The study covered 92 cities having a population of over 50,000. Fifty of the 92 cities maintain their own dental clinics for school children. In the cities not having municipal dental clinics other arrangements are made, such as examinations and treatment provided either at the university clinic or paid for from sickness insurance funds. In many cities dentists in private practice are engaged by the authorities to give dental care.

In addition to being provided in elementary schools, dental treatment is given in an increasing number of compulsory continuation schools. At the time of the investigation mentioned above at least 28 cities were providing such treatment.

The cost of this work is met almost entirely by the municipalities. In several cities subsidies are also given by social insurance funds. A very small fee is paid by the parents in some cities. —*Zentralbl f. Jugendrecht und Jugendwohlfahrt*, Berlin, Sept. 1927, p. 157.

Tetanus Following Vaccination Against Smallpox and Its Prevention—Whenever the subject of vaccination is brought up some one is very apt to have a story to relate of a very sore arm having resulted from that procedure. As such stories circulate, additions are occasionally made and we finally learn that the arm was lost. These lost arms are exceedingly difficult to find. There is no denying the fact, however, that very sore arms do at times follow vaccination. The unfortunate part of the whole matter is that people are very apt to blame the procedure itself for these results, and not the method employed in vaccinating, or the way in which the vaccination was or was not afterward cared for. Most, if not all, of the excessively sore arms are due to improper vaccination technic or to improper after care or lack of after care. Vaccination is a form of minor surgery and deserves the attention and care accorded any other minor injury.

The occasional cases of post-vaccination tetanus while relatively rare are a much more serious sequel. Among the thousands of vaccinations which must have been performed, only two such cases are known to have occurred in Massachusetts last year. In both instances, the cause was very evidently faulty after care.

In a recent number of *Public Health Reports* (Dec. 16, 1927), Dr. Armstrong of the U. S. Public Health Service presents the evidence, gained through case investigations and laboratory experiments, concerning post-vaccination tetanus. He concludes that such infection is due either to infected bunion pads used as dressings or to the presence of the specific organism at the site of vaccination, either at the time of vaccination or through subsequent contamination of the vaccination area. His summary is as follows:

1. Epidemiological evidence is presented which indicates that post-vaccination tetanus, when it develops, tends to follow severe primary vaccinations performed with large insertions and dressed with some type of shield or covering strapped to the site.

2. Shields and dressings are shown markedly to predispose to the development of post-vaccination tetanus in monkeys and rabbits vaccinated with virus artificially contaminated with *B. tetani*.

3. A proper vaccination is defined as one in which the insertion is not over one-eighth inch in its greatest diameter, made by some method which does not remove or destroy the epidermis. Such insertions treated openly, i. e., without the use of shields or dressings strapped to the site, have never, in so far as we are aware, been followed by post-vaccina-

tion tetanus. It seems probable that the adoption of these simple procedures of technic on the part of vaccinators, coupled with a proper warning to the vaccinated individual, or his parents or guardian, concerning the dangers of home applied shields and dressings, would eliminate tetanus as a complication of vaccination.

To carry out a proper vaccination as defined above, the following procedure is suggested:

1. The site should be the insertion of the deltoid.

2. Cleanse the skin thoroughly but *gently* with acetone or 70 per cent alcohol (denatured alcohol should not be used) and allow to dry.

3. Use the Kinyoun or multiple pressure method of insertion through a drop of virus expressed upon the skin: make horizontal pressure with the point of the needle 20 to 30 times. The skin should be held taut and the area of the insertion not over one-eighth inch in diameter. A new, sharp, flamed needle should be used. The virus is wiped off immediately afterward with sterile gauze.

4. After care—no dressing is applied at the time of vaccination or subsequently, unless an open lesion develops following the formation of the vesicle. Under such circumstances, a large antiseptic dressing is strapped loosely over the vaccination, the adhesive straps being applied well away from the vaccination site. Under no circumstances should shields or other forms of dressing than those specified be used, and such care should always be given under a physician's direction. The vaccination should be followed by the physician during its entire course, not only to determine the immunity status, but to insure the proper after care necessary to prevent complications.

—Charles Armstrong, *Pub. Health Rep.*, Dec. 16, 1927.

The Early Diagnosis and Nonparalytic Anterior Poliomyelitis—Much interest has been aroused in the recent outbreak of poliomyelitis in Massachusetts. In view of the confusion in regard to the nonparalytic form of the disease, the author discusses the early diagnosis based on a large number of observations during the summer. The typical onset and course of the acute stage is described.

The assumption that the disease may stop at any point in its development offers an explanation for the abortive type, where there is a generalized infection with the virus of anterior poliomyelitis, which does not go on to localization in the central nervous system; the nonparalytic type where there is a demonstrable invasion of the central nervous system both by physical signs and lumbar puncture, but where no discoverable paralysis ensues; and the paralytic type where there is invasion and injury to the central nervous system, with the characteristic and oftentimes crippling paralysis, which gives the disease its interest and its dread.

The author paints a picture of the symptomatology and physical signs of the nonparalytic type and the pre-paralytic stage of the paralytic type which very often permits the making of a definite diagnosis.

A tentative diagnosis of poliomyelitis having been made, the diagnosis is confirmed by an examination of the spinal fluid. The pressure is usually increased, there is an increase in cells up to 700 or 800, and the fluid presents a ground glass appearance. The sum of this information makes the differential diagnosis not difficult.

The author points out the impossibility of determining whether or not a case will become paralyzed, as well as lack of information as to the ratio of paralytic and nonparalytic cases. He summarizes as follows:

1. In the present state of our knowledge the prevalence of the abortive case of poliomyelitis as previously defined must remain a matter of conjecture. It is the type of case more often heard about than seen.

2. The nonparalytic and paralyzed case are alike in their onset, and can be diagnozed accurately in the majority of cases in the absence of or before the occurrence of paralysis.

3. The nonparalytic case as defined in this paper probably does not constitute a very large proportion of the total number of cases.

—Eliot H. Luther, M.D., *Boston, M. & S. J.*, Dec. 22, 1927.

PUBLIC HEALTH NURSING

MIRIAM AMES, R. N.

ARE YOU SATISFIED WITH THE ANNUAL REPORTS YOU RECEIVE?*

OVER the desk of any organization executive pours a stream of annual reports. Some are glanced at, some read through, and occasionally there is one whose contents are studied with a searching eye.

Several executives decided in 1924 that these reports would be more valuable if it were possible to have more uniform methods of preparing them so that one organization might place its figures beside those of another, make trustworthy comparisons and draw conclusions therefrom. The committee which was later appointed prepared an outline and made a report in 1925 which resulted in the addition of new members to the committee to represent the smaller communities. At the 1926 meeting, it was decided that the report should be published in the professional journals asking interested workers to submit any further recommendations which they might wish to make. Such a summary appeared [1] in the *Public Health Nurse* of May, 1927. Apparently there is no desire on the part of workers to add to this material. It would be justifiable to assume that public health workers are satisfied with the reports they receive, or at least that they are basing their hopes for improved conditions on the apparent change that is taking place.

The trend in content of reports during the past few years should hearten even the pessimist. After all, why should we expect changes in style only in the picture section of the report? The picture of a nurse, which appeared and reappeared as the frontispiece of a report from one of our large organizations in the years of 1912 and 1913, is in marked contrast to the one which appears in the picture section of this year's report from another large city organization. Our first reaction to these pictures is to laugh and to think how absurd it was to climb about on tenement stairs in skirts of such length. How much more attractive and comfortable our nurses appear in modern times, and how much more universal is a businesslike uniform in organizations all over the country. In the "hat pin age" there were many public health nurses who went about in the homes in ordinary street clothes. (See Newark, 1912.)

The change in fashion is quite significant of the changes which have taken place in the general content of the report. With the long skirts of those days we were apt to find the long narrative of the nurse's work and the long list of "donors," etc. Today, when modern advertising, moving pictures and radios have taught us that the public will only grasp what can be seen at a glance, we have the concise, business-like statement from the president and director, the single page of large-typed totals for statistical material and the balance of the report made up of well chosen pictures, all of which give a concise story of the work. (See Boston, 1925).

* This paper by Marguerite A. Wales, R.N., was presented as the Report of the Committee on Standard Forms for Annual Reports of Public Health Nursing Associations or Groups, to the Public Health Nursing Section of the American Public Health Association at the Fifty-sixth Annual Meeting at Cincinnati, O., October 20, 1927.

Prof. Ira V. Hiscock has stated in his admirable paper which appeared in the April, 1927, *Public Health Nurse*,[1] that a report must be prepared for four principal groups of people: the supporting public, the board which is responsible for management, the staff, other public health workers, etc.

Most of the supporting public will only be interested in the story which makes its appeal in a striking way—hence the resort to modern advertising methods. The board responsible for management will be interested in figures on the financial page and the statistics, with a brief story of growth and plans for the future. From the new topics creeping into the president's reports, referring to national public health projects, we see the effect of the layman's place in our public health organizations (see Toledo, 1926), and we can count more and more on a board which will understand our problems. The staff, of course, we should assume will be interested in the same sort of material as that prepared for "other public health workers." Until recently the fourth group, which represents the reader who studies reports with professional interest in comparative tables and development of programs, has been the most neglected one.

In the past, these comparisons have been difficult to make because of lack of uniformity in terms. What has been the distinction made between "cases" and "patients" in statistical reports? How should tuberculosis *contacts* be recorded? In an association doing child welfare work, and therefore carrying a large number of well children who could not be discharged, should the records be based on *admittances* or on *discharges?*

These problems brought about the appointment of this committee. The work of "defining terms" has been left to the Record Committee of the National Organization for Public Health Nursing, which has made up record forms which are being tried out in many organizations all over the country.

During the years since the N. O. P. H. N. Visiting Nurse Service Study,[2] organizations have been making much better analyses of their work and we begin to see a change in the annual report. Cleveland, we believe, was the first organization to introduce figures from a "time study" into the pages of its report. Immediately other organizations began to compare notes. "If Cleveland spends so much time on this or that phase of work, how do we compare?" they began to ask, and these questions gradually crept into print. Later, Detroit presented a comparative table from a number of organization figures which was very helpful. We find ourselves saying: "If Detroit spends 56.9 per cent of its time in maternity work, how much time per visit do their nurses average in the care of a maternity patient?"—and so on.

Today, we are getting a basis of study, and the annual report will come to be the exchange of program and general plan which will lead us to a better understanding of the city programs. With health departments using the *Appraisal Form* more and more and bending their efforts toward defining standards, surely the nursing organizations must work toward some means of comparing their work and how it fits into the city picture, and this can be greatly facilitated by a standard form of annual report. With this in mind, we shall review here the points which the committee agreed upon as desirable in an annual report.

The reports should contain a general report from the president or director stating the principal aims of the organization, based presumably on the needs of the community. The Visiting Nurse Association is the key group to study morbidity situations and much valuable data could be prepared by taking groups of diseases and trying to establish a mor-

bidity rate according to age. The layman who is giving his support to such work will find much of interest in figures which show just how far his money will go in meeting the community demands.

The report should contain an outline in brief of the various branches of the service instituted to carry out the aims; for instance, the statement here could contain information as to whether the organization carried solely a staff for acute sickness situations, or whether it included: acute sickness, chronic sickness, maternity, clinic service, health education, and public health teaching. Statistical material should be presented in connection with the various services; for example, the number of staff apportioned to each service (obtained from number of hours, for a generalized service); amount of time spent in each service; and per cent distribution of the entire work among the various services.

This might seem an appropriate place in which to enter a brief survey of the community facilities and a justification of emphasis on any one or more branches of the organization's work. The number of cases and visits should be listed in age groups and nationalities; the morbidity and mortality statistics by disease groups; the duration of visits and number of visits by diseases (see Dr. Louis I. Dublin's[4] "Records of Public Health Nursing" for a uniform method of tabulation of statistics above mentioned). Reports should clearly define the organization's policy in regard to the content of a visit; that is, when a nurse is carrying a prenatal patient under her supervision, if this supervision is carried on by correspondence rather than by personal visits, it should be so stated.

There should be a statement of budgets and costs. The items of budget to be included and how these should be entered and defined are covered in the Report of the Committee to Study Visiting Nursing.[3] Statistical material based on the suggestions of this report would afford also a detailed study of the costs of various services if an organization were equipped to gather and tabulate this additional data.

In this connection, the following might be suggested as valuable and interesting where possible to obtain: time spent in each function which the nurse performs, that is, office, travel, assigned duties, clinic work, field work, and, further, time spent in different types of field work; costs of service time (using such a unit as the hour for a basis; from this could be readily computed the amounts expended on maternity work, on acute sickness visiting, etc.); type of work accomplished; number of visits by type. The report should include a statement of the future plans of work and recommendations for the progress of public health work in general.

In conclusion, then, we might say that while we find the annual reports of some organizations including just the type of figures needed to make comparisons easy, other organizations should be encouraged to follow this general outline so that workers all over the country may benefit by comparisons of work and programs.

COMMITTEE

MARGARET STACK, R. N., *Chairman*
MARGUERITE A. WALES, R. N., *Secretary*

Representatives Vital Statistics Section
LOUIS I. DUBLIN, Ph.D.
WILLIAM H. GUILFOY, M. D.

Representatives N. O. P. H. N.
GRACE M. HILLS, R. N.
ELIZABETH STRINGER, R. N.

Representing Smaller Communities
ISABEL GLOVER, R. N.
RUTH HOULTON, R. N.

REFERENCES

1. Report of the Committee on Standard Forms for Annual Reports of Public Health Nursing Associations or Groups, for 1926, *Pub. Health Nurse*, 19, 5:225 (May), 1927.

2. Hiscock, Ira V. The Value of Records and the Annual Report, *Pub. Health Nurse*, 19, 4:167 (Apr.), 1927.

3. Report of the Committee to Study Visiting Nursing. Published by the N. O. P. H. N., 1924. 196 pp.

4. Dublin, Louis I. Records of Public Health Nursing. *Pub. Health Nurse*, 13, 8:385 (Aug.); 13, 9:454 (Sept.); 13, 10:518 (Oct.); 13, 12:637 (Dec.), 1921; 14, 1:17 (Jan.), 1922.

Hourly Nursing—Hourly Nursing, or the appointment service plan, is being given considerable thought by Visiting Nurse Associations all over the country. There are at present four methods of administration in vogue. In certain cities, the entire service is carried by the visiting nurse staff, in others there is a joint scheme worked out with the central registry for nurses, in still others the registry carries the service alone, and of course there is the "free lance" nurse.

The Public Health Nurse for January, 1928, is publishing follow-up material on the study made by the Statistical Department of the National Organization for Public Health Nursing in August, 1927. This material includes an excerpt from Dr. Winslow's report* on the progress of the Grading Committee as given at the A. P. H. A. meeting in Cincinnati, and a bibliography on the subject, which we quote here. Other articles and discussions are to follow.

Four "Close-ups" of Hourly Nursing. *Am. J. Nurs.*, June, 1925, p. 721-727.

Open Forum. *Am. J. Nurs.*, Jan., 1927, p. 61.

Hearsay and Facts in Private Duty. J. M. Geister. *Am. J. Nurs.*, July, 1926.

Twenty-four Official Registries Provide Hourly Nursing for Public; Interesting Two Years' Registry Experiment in Buffalo, N. Y. *Anagrams*, Feb., 1927. American Nurses' Assn.

Hourly Nursing in Public Health Nursing Associations. L. M. Tattershall. *Pub. Health Nurse*, Aug., 1927. p. 397-401.

Hourly Nursing (abstract of paper). M. E. Edgecomb. *Pub. Health Nurse*, Aug., 1927. p. 401-2.

Chicago's Hourly Nursing Service Aids Convalescents. *Nation's Health*, Aug., 1926. p. 560.

Nursing Care by the Hour or by the Day. E. Van Ness. *Nation's Health*, Aug., 1927.

Nursing the Community. N. Deutsch. *Pacific Coast J. Nurs.*, Dec., 1926.

Mrs. Citizen Wants a Nurse. *Pacific Coast J. Nurs.*, Jan., 1927.

Hourly Nursing in Philadelphia. *A. C. H. A. Bull.*, Jan., 1926. p. 13.

One Way Out. D. Deming. *Survey*, June 15, 1926, p. 377.

* This report will appear in the March issue.

Bulletin, Chicago Health Department, Aug. 17, 1926, p. 210.

Washington, D. C. Instructive Visiting Nurse Society Report, 1925, p. 10.

Report of the Committee to Study Visiting Nursing. p. 34.

Manual of Public Health Nursing. National Organization for Public Health Nursing. p. 163.

D. D.

Buffalo Conference On Family Life in America—The Conference on Family Life in America, held in Buffalo in October, 1927, dealt with many problems closely related to the health of the family and individual—the meaning and use of leisure, spiritual factors in family life, the ideals of marriage and parenthood, and most interesting perhaps, the changing basis of family support and expenditure. This last was dealt with very ably by Paul H. Douglas of the University of Chicago. He said in part:

The family as a consuming unit will in all probability, despite certain obviously opposite forces, continue indefinitely. In the future, however, increasingly large numbers of men and women will earn their living as individuals within the family. This individualistic way of securing income, and the largely combined method of expenditure, present some interesting prospects.

Will the employed children contribute to a common fund? Many now retain their earnings and live on a far more expensive scale than others of their economic class. They are young, and spend for luxuries what is spent by others on necessities. This scale of living unfits them for marriage, and the proper physical and spiritual care of children. Another result is the added weight of responsibility on the mother and father, and younger children, who are often deprived of the basic needs in family life because the older children fail to pool their earnings. The most overworked and exploited members of society are the working-class mothers of two or more children. Even their food is often cut below the level of decency and efficiency. No labor laws have been enacted for them! Adjustment of wages to number of children supported has been suggested, but bears with it many objections. The writer feels strongly that bachelors and childless couples have not so great a demand on industry as the family, which is rearing the next generation, and which is therefore returning to the nation manpower of definite economic value.

D. D.

EDUCATION AND PUBLICITY

EVART G. ROUTZAHN*

Group Thinking Better Than One Mind—In building new words from certain given words a group did better than individuals working alone, as reported by Goodwin B. Watson, of Columbia University, at the recent meeting of the American Association for the Advancement of Science. Dr. Watson granted that further investigations are necessary to ascertain whether groups are more effective in accomplishing more difficult tasks. The editor would call attention to the positive gains in many situations through group discussion *rightly conducted*. *Created Discussion*, revised edition, is a clear, untechnical guide in keeping group discussion from deteriorating into aimless talk. "It shows in sharp outline the principles by which any average group can open up an issue in ways to assure an orderly and searching procedure. Members of committees, conferences, and study circles will find in its pages new suggestions for making group experience rewarding."—*The Inquiry*, 129 East 52nd St., New York, N. Y. 63 pp. 50 cents.

Gains in 13 Years—"The American Social Hygiene Association, through its Division of Public Information, for 13 years has steadily developed and promoted ways and means for building up public opinion in favor of sound social hygiene measures. The results are apparent. Whereas, among most people, sex was formerly a subject discussed in whispers behind closed doors, social hygiene is now a leading topic of discussion in meetings and conferences everywhere. Where once it was difficult to get a hearing in schools and colleges, or before clubs and educational groups, today the association's staff of lecturers is engaged for months ahead. Our books are found in the regular stock of the average book-shop, thousands of requests for our pamphlet publications are received each month, and the *Journal of Social Hygiene* and the *Social Hygiene News* are available not only in libraries generally in this country, but abroad as well. There is a steady demand for motion pictures, lantern slides, posters and specially arranged exhibits dealing with social hygiene."—*Social Hygiene News*. "Public Information Number." 370 Seventh Ave., New York, N. Y. Nov. 30, 1927. *Free*.

"What Do You Think of It?"—Ask this question of the average individual and he will say that the annual report is "fine," the letter is "a winner," the meeting "was great." Most people do not like to criticise us and our products to our faces.

Getting small groups of people together to criticise frankly, to raise questions and to make suggestions is about the only method of getting at the honest judgments of the non-expert. And the sharing of such opinions stimulates the critical attitude toward our own material and stirs latent common sense which after all is enough to lead us to see many of the faults in our health education material.

Indoor Sport for Health Workers—Within a year or a little more six national and local New York agencies have made collections of health education

* Please address questions, samples of printed matter, criticism of anything which appears herein, etc., to Evart G. Routzahn, 130 East 22d St., New York, N. Y.

posters or of information about available posters, and several others have mimeographed lists on hand. Would it help to lessen duplication of effort if the editor of this department could announce when you are about to collect information or make up lists?

The National Health Library, 370 Seventh Ave., New York, N. Y., announces the compilation of a list of health education posters.

The National Health Library announces a revision of a list of health magazines of general interest and bulletins or house organs of national, state and local health agencies—principally of the public departments.

Copies of the National Health Library lists will be supplied upon request. *Free.*

The editor of this department announces the preparation of a list of national, state and local house organs and other periodicals in all health and other social and civic fields in the United States, Canada and other countries.

The editor announces a revision of lists of national, state and, to some extent, local agencies—health, social and civic—in this and other countries.

The compilers of the above lists will welcome coöperation.

Making a Survey Work—

No reform movement, or important change in the community's activities can be forced upon the community from the outside. Anything of permanent worth must come from a desire within the group for such a change or reform .... Before the majority of the members of the community will have the same attitude toward any extensive change or reform, however, they will need to have the same insight into the local situation and the causes back of it, that the group of leaders who have been active in carrying on the survey have.

This insight into local conditions and activities and the possibility of improvement and greater efficiency will be reached by the majority of the community only when they have been given the facts in the matter. That is why the Publicity Committee has the most important work of the entire survey.

The object desired will never be reached by having published one or two formal reports in the newspapers or a formal report in pamphlet form, no matter how valuable such a report may be. While these formal reports have great value, especially for comparative purposes and for the leaders of the various social agencies, they must be only a part of the general campaign of publicity which is carried on for the benefit of the local community.

In chapter on "Publicity" in *Technique of Social Surveys*, by M. E. Elmer. J. R. Miller, Los Angeles. Revised 1927.

Consultation with Specialists— Surveys and studies, investigations and reviews of many types are very common in the public health field. Frequently it is the department or volunteer agency of known efficiency and effectiveness that calls in a specialist or group of leaders in public health to look it over—a health examination, if you please, made for the same reasons as a physical health examination.

The same procedure is being followed in business and industry to a considerable extent. And now a writer in *Printer's Ink* argues for such an examination of the advertising department. See how the argument could apply to the publicity and educational work of a national, state or local health body:

What would have resulted? When a physician is treating a patient, the family or the man himself may worry over the lack of progress and begin to lose confidence. The doctor may be morally sure that he is doing all that can be done. But, if the case is critical, he often finds it to be good psychology to call in one or two other medical men and get their opinions. If they agree that the treatment is right, the patient and his friends are reassured and the doctor then has a fair opportunity to do his work. Doubtless the others can make certain helpful suggestions. Two or three heads are always better than one in medicine just as they are in anything else.

On the other hand, the consultation may develop something that had been overlooked, requiring the services of a specialist. In this case, the first doctor would naturally step aside.

Or perhaps there might be no dissatisfaction on the part of the patient or his family, but the physician himself might be worried over the progress of the case. He would be doing a wise and professional thing if, with the

consent of the family, he should call in a couple of other doctors and check over the case with them. Here the outcome would be substantially the same as before. If he were found to be on the right track, his confidence in himself would be increased and the patient's chances for recovery made better.

Such things are happening in the practice of medicine every day in every town.

Now That the Holidays Are Past—The time has come when many groups of health and other social workers might get together to talk over their annual reports, leaflets, meetings, etc. The New York Committee on Publicity Methods has already started a series of discussion meetings and self-clinics. To avoid speech making, to secure adequate group participation, and to have a friendly, intimate atmosphere, the sessions are limited to 20 or 25 people—the smaller number being preferable. The advance registration shows that two sessions each will be needed to handle some of the topics.

The New York Topics—Registrations have been accepted for the following topics:

1 Comparisons of costs of printing—Are we paying the right prices for what we get?
2 Problems in dealing with printers
3 Costs, qualities and uses of paper
4 Annual reports—a group clinic on reports of those present
5 The uses of dailies other than the metropolitan dailies
6 Our doubts or difficulties in dealing with newspapers
7 Press stories—a group clinic on press releases of those present
8 How can we evaluate results of our educational publicity?
9 How agencies are "Programming" their publicity
10 Comparison of functions included in publicity departments
11 Figuring costs of mail appeals
12 Sobs vs. reasons in money appeals
13 Difficulties in using outside publicity workers or bureaus and how the difficulties have been overcome
14 Film slides and continuous motion pictures
15 The uses of the multigraph and mimeograph
16 Problems of those doing state-wide publicity
17 Problems of those doing national publicity

The details on any topic will be sent to any one who wishes to organize a local group. Members of the Public Health Education Section of the A. P. H. A. who wish to attend some of the New York sessions will be supplied with registration blanks. Address: Committee on Publicity Methods, 130 East 22d St., New York, N. Y.

Baby's First Letter—The first letter received by most babies in Racine, Wis., comes from the Board of Health:

Dear little friend—

A happy birthday and many, many of them!

You think you are quite big, now that you are eating cereals, toast, butter and cooked fruits, besides your milk and orange juice; now don't you? And you have some tiny, white teeth, too.

What a big person you are getting to be! And just after this first birthday is the time to make your first visit to the dentist and to have a tooth brush all your very own just like the big ones Daddy and Mother have.

And while you are out to see the dentist, go to visit your doctor, too, or the baby clinic and ask all about the treatments which will keep you from having smallpox and diphtheria. Maybe the treatments can be started that very day—the sooner they are begun, the safer you will be.

Keep on growing strong, little friend, by eating the good things Mother gives you and sleeping 15 hours of the 24 in fresh air. Oh yes! And stay away from those people who have colds—colds may mean all kinds of sickness to you.

Again, I wish you a happy birthday!

Yours for health,
(Signed) W. W. BAUER, M. D.,
Commissioner of Health.

The letter is printed on a pleasing rough finish paper, 7-¼ by 10 inches, with envelope 7-½ by 4 inches. Delivery is made by health department nurses on each first birthday. Says Dr. Bauer:

Births as they are reported, are indexed in a tickler date file a year ahead, and the delivery of the greeting is always carefully timed for exactly the baby's birthday, except that Sun-

day and holiday babies receive theirs on the last business day before the birthday. The cost is $43.00 in quantities of fifteen hundred. For us this is a little more than a year's supply.

Linoleum Blocks Again—More effective than photographs for many illustrations in much health education and publicity are linoleum blocks. "Modern linoleum block printing is, in reality, the revival of one of the most ancient forms of printing."

How the Cornell College of Agriculture makes effective and inexpensive short runs of posters was told in the November, 1927, issue of the JOURNAL.

An illustrated working guide for making linoleum blocks for various printed forms appears under "Making Posters from Linoleum Blocks," by C. W. Smith, in *The Poster*, 307 South Green St., Chicago, Ill., Nov., 1927. 30 cents.

Detailed information is given in a delightful volume, *Essentials of Linoleum-Block Printing*, by Ralph W. Polk. Manual Arts Press, Peoria, Ill. 1927. 60 pp. $2.00. Many a health worker would find that "the making and printing of linoleum blocks is intensely interesting work," and that "it is a real joy to create an original design, carve it in linoleum, and to obtain printed copies of it." Limited editions can be printed by hand, or an old-fashioned letter press can be used. The high school printing office may already be using the new-old art, and commercial printers can run the blocks in your printing jobs. Quite a few illustrations for health use can be copied, and probably art instructors can be enlisted. ***We hope to exhibit a collection of linoleum illustrations at Chicago in October,*** 1928.

RADIO

For dates of talks over station WEEI, address Mass. Society for Mental Hygiene, 5 Joy St., Boston, Mass.

There was little tuning off by those not discouraged by the dull title, "Heart Disease," who listened in on Dr. M. M. Myers at Station WHO, Des Moines, Ia. "A Doctor, a Nurse and a Ford Car" would have been a better title. In The Campaign, Iowa Tuberculosis Assn., Des Moines, Ia.

"Three talks a week on guides to health and safety, embracing in detail the subjects of home hygiene, first aid and life-saving," were put on the air by the Pittsburgh Red Cross Chapter "in the 1926 enrollment, in addition to educational talks on Home Service, Junior Red Cross and general activities. Beginning October 4, some five weeks before Armistice Day, and ending on November 22, at the close of the campaign, these health talks were not on abstractions but on subjects of immediate interest to every parent with a receiving set. They included such matters as care of the baby, small child and school child; the cause and prevention of common ailments, proper diet, emergency care and treatment of the injured, and water safety and rescue work, as taught by the chapter staff. As a result of these radio addresses, the chapter received many inquiries from persons desiring to join classes. In any case, public attention was directed to the health education work of the Red Cross."—*Red Cross Courier*. Nov. 1, 1927.

For ammunition in dealing with radio stations, see the following:

"Broadcasting Buncombe" about health. Editorial review. *J. A. M. A.* Nov. 19, 1927.

"Station UCFL." Editorial on health exploitation. *Hygeia*. Dec., 1927.

"Can Radio Be Rescued?" *New Republic*. Oct. 26, 1927. The general situation and how it came about.

A REQUEST FROM BRAZIL

Dr. Euvaldo Diniz Goncalves, Rua Morechal Bittencourt, n. 15, Bahia, Brazil, writes for "some information about popular instruction of adult groups in matters of health; that is,

health publicity or health propaganda. As director of the division of health education in the state department of public health, I am interested to know the service done by the similar offices of that country. Will you have the kindness to ask for me some educational material and information regarding the activities of the state departments?"

Will some state departments write, and some local, state and national agencies send him examples of educational material? Please tell the editor when you have done so.

EDUCATIONAL MATERIAL

Public health workers or at least those who use health posters are invited to help the National Health Council make up a list of posters and placards available nationally. Ask the Council at 370 Seventh Ave., New York, N. Y., to send a copy of the "preliminary list" and then quickly write them your suggestions as to the information given in the list, and the omissions or inclusions to which you object.

An 8-page folder for mothers: Keeping the Well Baby Well. Children's Bureau, Washington, D. C., 1927.

Texts for teaching and materials for use are listed in *A Catalogue of Supplies and Books on First Aid and Life Saving*, 1927 (revised). American National Red Cross, Washington. *Free.*

The "what are Strep-to-coc-ci?" car cards of the Onondaga Health Assn., Syracuse, N. Y., are being used by the Tuberculosis Society of Detroit, Mich.

A revised edition has been issued of *Plays and Pageantry*, the list of health plays recommended by the National Health Council. *Free* of National Tuberculosis Assn., 370 Seventh Ave., New York, N. Y. Gives synopses of 25 plays which are sold at 10 to 25 cents a copy. They are arranged in age groups: 5-7 years of age, 7-10, 10-12, 13-18, for older persons.

Eight pages of posters in color, 2 on prenatal care (from India and Russia) and 6 on child health (from China, Japan, France, etc.), accompany "Teaching Prenatal Care by Means of Posters," by Stuart B. Blakely. *Hygeia*, 535 North Dearborn St., Chicago, Ill., Dec., 1927. 25 cents. "The Russian prenatal posters are full of action, striking in color, beautiful in design, with the printed matter subordinate and even decorative."

A Long Life and a Merry One, by D. B. Armstrong. Metropolitan Life Ins. Co., New York, N. Y. *Free.* Reprint from *North American Review*. "The significant thing for the average man of today is not only that he lives 30 years longer than his forefathers of 1789, with much less illness and much more comfort, but also that he can today add 10 or 20 additional years to his life span."

Fifteen enclosures and four mimeographed pages (plus colored mimeographed cover) of ideas and references to material for use by New York local tuberculosis workers make up the second issue of *Do You Know?* Frances H. Meyer, Health Information Service, State Committee on Tuberculosis and Public Health, State Charities Aid Association (14 words in that name!!), 105 East 22d St., New York, N. Y.

If you wish to locate popular or scientific material on cleanliness—in the home, school, office, factory or community—it is likely to be listed in *Cleanliness: A List of Recent Publications.* Cleanliness Institute, 45 East 17th St., New York, N. Y., 1927. 30 pp. *Free.* Special attention is given to school material, stories, free or inexpensive material, both general and for school use. The binding of this mimeographed pamphlet may suggest a usable wrinkle.

LAW AND LEGISLATION

JAMES A. TOBEY, LL.B., DR.P.H. *

A MAELSTROM of measures descended on the Seventieth Congress between December 5, when it convened, and December 21, when it took its holiday recess. Out of some 8000 bills and resolutions introduced in both houses of Congress during the first two weeks of the session, a score or more are of considerable interest to sanitarians.

The Parker Bill—Without a change, Hon. James S. Parker of New York has reintroduced his bill for the coördination of federal health activities. It is now known officially as H. R. 5766, a number which should be kept in mind. This measure was introduced on the opening day of Congress and was referred to the Committee on Interstate and Foreign Commerce, of which Mr. Parker is chairman. This committee has referred the bill to a subcommittee headed by Hon. Carl E. Mapes of Michigan, which rather unexpectedly held hearings on the measure in January. Considerable opposition developed against the first section, giving the President power to transfer bureaus to the Public Health Service. The subcommittee is said to have deleted this section and reported the bill favorably with this and some other changes. At the proper time sanitarians will be asked to communicate with their Congressmen about it, as this measure has been indorsed by every leading national public health agency.

The Ransdell Bill—Senator Ransdell of Louisiana has reintroduced his bill for a national institute of health and it is now S. 871. This bill, which has been referred to the Committee on Commerce of the Senate, is similar to the Parker Bill, but has an additional section authorizing an appropriation of $10,000,000 for a national health institute, which would be established in the Public Health Service. The idea is sound and the bill has been indorsed by the A. P. H. A.,† but because of the appropriation feature, it may have a more precarious legislative course than the Parker Bill. This bill has also received approval from the American Chemical Society, and the Chemical Foundation has issued a pamphlet by Charles H. Herty entitled "The Ultimate Mission of Chemistry: Good Health," which contains a strong plea for the passage of Senator Ransdell's bill. Hearings on this bill are scheduled for the middle of March.

The President's Message—The Annual message of the President, sent by Calvin Coolidge to be read at the beginning of Congress, contained nothing at all on the subject of national health.

In transmitting the budget for the next fiscal year the President did take occasion once again to decry the system of federal subsidies to the states. He pointed out that federal interference in state functions can never be justified as a permanent policy even though it may be warranted by an emergency. "As shown in the Maternity and Infancy act," says Mr. Coolidge, "when once the government engages in such an enterprise it is almost impossible to terminate its connection therewith."

T. B. and V. D.—Any World War veteran afflicted with tuberculosis who brings such fact to the attention of the Veterans' Bureau prior to September 1, 1928, would be presumed to have acquired the disease in the service, according to

* Correspondence to the associate editor may be sent to him as follows: c/o The Borden Company, 350 Madison Avenue, New York, N. Y.

† See Resolutions, *A. J. P. H.*, Nov., 1927, p. 1163.

a bill, H. R. 5477, introduced by none other than Mr. Blanton of Texas. This measure would extend the present time from January 1, 1925.

A veteran who contracted a "social disease" while in the service would also be entitled to treatment under the terms of this bill, and this regardless of whether the disease was due to misconduct or not.

Another bill, H. R. 261, would grant federal hospital treatment to postal employes suffering from tuberculosis, nervous diseases, or mental occupational ailments.

A Federal Board of Alienists—A United States Board of Alienists, to be composed of twenty well qualified physicians, paid salaries of $25,000 a year each, is proposed by Representative Black. This bill, H. R. 7936, states that the duties of the board would be to diagnose and treat mentally deranged veterans, study mental diseases generally, recommend a code of ethics for alienists, and inquire into insurance company methods of dealing with insanity. A modest appropriation of $5,000,000 would be authorized for these purposes.

A Federal Safety Division—The present U. S. Bureau of Labor Statistics would be augmented by the creation within it of a Division of Safety, according to S. 1266, introduced in the Senate by Mr. Shortridge. This division would collect statistics on industrial accidents and analyze them, study labor safety plans, and investigate all phases of occupational hazards and diseases and their prevention. There is a proviso in the bill to the effect that such work shall be undertaken in coöperation with other federal and state agencies and no studies which are already being conducted shall be duplicated.

The work of the Bureau of Labor Statistics is described in detail in the *Monthly Labor Review* for December, 1927, 30 pages being needed for this article. Among the activities of interest to sanitarians are those dealing with industrial safety codes, the industrial accident prevention conference, industrial hygiene, and the elimination of the manufacture of fireworks containing phosphorus. In the field of industrial hygiene the work includes publication of occasional bulletins dealing with industrial poisons or diseases; a review of current medical literature as it relates to occupational hazards, which is published each month in the *Monthly Labor Review;* and replies to many inquiries regarding specific poisons or hazards from gases, dusts, and fumes. Recent bulletins have been published on lead poisoning and health conditions in the printing trades.

Other Health Legislation in Congress—Among the other bills of significance to sanitarians are: S.1267, to extend medical and hospital relief to retired officers of the Coast Guard; H. R. 16, to regulate osteopathy, and H. R. 5763, to regulate chiropractic in the District of Columbia; S.762, to provide for a sanatorium at Claremore, Okla.; S.1602, to amend the opium importation act; S. 1865, to provide for the protection of municipal watersheds within the national forests; H. R. 5747, to authorize admission to naval hospitals of dependents of officers and enlisted men in need of hospital care; H. R. 5604, for additional hospitalization for veterans; H. R. 7951, to control diploma mills in the District of Columbia; and H. R. 487, to prevent the manufacture, sale, or transportation of adulterated, misbranded, poisonous or deleterious foods, drugs, medicines, and liquors.

Physicians in Congress—If the biographical data in the annual Congressional Directory is dependable, there seem to be only 8 physicians and 3 dentists among the members of the Seventieth Congress. As usual, the lawyers predominate, with a few farmers and business men among the elect.

The only physician in the Senate is Dr. Royal S. Copeland of New York, though Senator Woodridge N. Ferris of Michigan studied medicine for a year or two. Senator Henrik Shipstead of Minnesota is a dentist.

In the House of Representatives there are 2 M. D.'s from New York, Dr. John J. Kindred, who has been in Congress for five terms, and Dr. William I. Sirovitch, who is there for the first time. Dr. Kindred is also a lawyer. The other physicians include Dr. Frank P. Bohn of Michigan, Dr. Ed. M. Irwin of Illinois, Dr. William T. Fitzgerald of Ohio, Dr. J. Howard Swick of Pennsylvania, and Dr. John W. Summers, of Washington. There are also 2 dentists, Dr. R. O. Woodruff of Michigan and Dr. Frank Crowther of New York. Representative Stephen G. Porter of Pennsylvania studied medicine for two years but thought better of it and became a lawyer.

Caustic Poison Law now in Force—When the President approved the First Deficiency Appropriation Act on December 22, funds were made available for the enforcement of the Federal Caustic Poison Act, which became a law on March 4, 1927. The administration of this law for safeguarding the distribution and sale of dangerous corrosive and caustic acids and alkalies in interstate and foreign commerce is entrusted to the Department of Agriculture, acting through the Food, Drug, and Insecticide Administration.

Legal Use of School Health Records—Can school health examination records be used as court evidence? Are these records an open book for anyone to refer to at will? Has any legislation been passed anywhere which protects the schools from the use of these records by out of school agencies? These questions have been submitted to us by a student at Teachers College in New York.

It is the general rule in the law of evidence that, in the absence of a specific statute to the contrary, relevant public documents may be admitted as evidence in courts of law. School records are public documents and authentic health reports, submitted by physicians as part of their school duties, would be admissible as evidence. It is in the interests of justice to secure all pertinent facts bearing on litigation.

Whether school health records are open to the public for general inspection would depend upon local policies and rules. Public records are usually public, unless a law says they shall not be. Health records in schools ought to be open only to those who have a legitimate interest in them.

As to the existence of legislation on this subject, it would be possible to answer this question only after an examination of state codes. The associate editor would be pleased to learn of any statutes which deal with this important point.

Enjoining a Laundry as a Nuisance—A laundry which emits noises and odors, blocks sidewalks, and deposits soot and grease has been held to be a nuisance in California, Williams v. Blue Bird Laundry Co., 259 Pac. 484. Instead of closing the laundry, however, the court upheld a decree enjoining the Blue Birds from operating in a manner deleterious to health. That the laundry had been a going concern for ten years in the same place was held not to stop nearby residents from suing to enjoin it from causing a nuisance.

Tests for Cod Liver Oil—The national government will soon take steps to remove from interstate commerce all cod liver oil which is misbranded or adulterated. A biological examination conducted under the auspices of the Food, Drug and Insecticide Administration has shown that many of the cod

liver oil preparations advertised to contain vitamins A and D were virtually devoid of A and sparse in D. Since cod liver oil is now so widely used to prevent and cure rickets, this is a wise measure by the government.

Additional evidence of the value of sunlight in preventing and curing rickets is presented in a news release sent out by the U. S. Children's Bureau on December 12, 1927. It is pointed out that children in Porto Rico, where there is abundant sunlight, seldom have rickets, a fact confirmed by examinations of 600 infants on this island.

Miscellaneous Items—In Virginia a court has held that a city has the right to adopt reasonable and necessary health regulations, Etheredge v. City of Norfork, 139 S.E. 508.

Compulsory insurance against tuberculosis is provided in a decree approved in Italy in October, 1927, according to *Child Welfare News Summary* for December 17, 1927.

A study of juvenile delinquency is recommended by the chief of the U. S. Children's Bureau, who urges that a division be created in the bureau for that purpose.

Anthrax is still a danger in different industries, according to the U. S. Bureau of Labor Statistics, which calls attention to 7 fatal and 75 non-fatal cases of an industrial origin reported in Pennsylvania from 1922 to 1926.

Midwife supervision in various foreign countries is described by Dr. George W. Kosmak in the *Journal of the American Medical Association* for December 10, 1927. In the same issue Dr. S. Josephine Baker reports that 16 states have laws making puerperal septicemia a reportable disease. Her article is on Maternal Mortality in the United States.

CONFERENCES

February 6-8, Council on Medical Education and Hospitals, A. M. A., Chicago, Ill.

February 6-8, Federation of State Medical Boards of United States, Chicago, Ill.

February 14-16, Engineering Institute of Canada, Montreal, Can.

February 16-18, Mid-West Conference on Child Study, Chicago, Ill.

February 23-24, Third New York Health Conference, New York, N. Y.

February 23-25, National Vocational Guidance Association, Boston, Mass.

February 27-29, National Society of College Teachers of Education, Cambridge, Mass.

February 27-March 1, National Association of Deans for Women, Boston, Mass.

March 5-9, American College of Physicians, New Orleans, La.

April 12-14, American Society of Biological Chemists, Inc., Ann Arbor, Mich.

April 12-14, Federation of American Societies for Experimental Biology, Ann Arbor, Mich.

April 17, North Carolina Medical Society of the State, Pinehurst, N. C.

April 30, May 2, American Pediatric Society, Washington, D. C.

April 30, May 2, National Probation Association, Memphis, Tenn.

April 30, May 5, National Congress of Parents and Teachers, Cleveland, O.

July 8-13, First World Congress of Social Workers, Paris, France.

July 16-21, Thirty-ninth Congress Royal Sanitary Institute, Plymouth, England.

BOOKS AND REPORTS

Interpreters of Nature—*Essays by Sir George Newman, K. C. B., M. D., Hon. D. C. L., LL. D., New York: Oxford,* 1927. 296 pp. Price, $4.50.

All of us are familiar with the medical writings of Sir George Newman, who is justly regarded as one of the outstanding public health men of the world. It comes as somewhat of a surprise to many of us to find in this book a series of essays, some of which we would hardly have connected with medicine or the history of medicine. The author has shown the extensive knowledge with which we are so familiar, and in addition has given us a charming book made up largely of biographies of well-known men, though very few people would expect to find Keats included in this group. He is known to most of us only as a poet, and not as an apothecary or medical student, though we are told of certain discoveries which were made familiar to us eighty years later by the great Metchnikoff.

In such a book, it is hard to select any one or more essays for especial praise. Some readers had the honor of knowing Pasteur, while a large number knew the late Sir William Osler. It may be presumed that a great many readers will turn first to one or the other of these two essays. However, every medical man worthy of the name knows of the great work done at Padua, and the contributions to medicine of Sydenham, Boerhaave, and John Hunter. There is not an essay, nor even a page in any of the nine essays contained in the book, which is not worthy of careful attention. The style of the writer is exceptionally good, and the book as a whole can be heartily recommended both to the medical profession and to all who are interested in the advancement of medicine or of mankind. The reading of such a book is not only extremely informative, but gives to the busy man a delightful change from the routine of his labors.

We would like to see added an essay on the life of that Prince of English physicians, Sir T. Clifford Allbutt, and a sub-title which would give a better idea of subject-matter of the book.

M. P. RAVENEL

Review of the Report of An Investigation of the Pollution of Lake Michigan in the Vicinity of South Chicago and the Calumet and Indiana Harbors 1924-1925—*By H. R. Crohurst, and M. V. Veldee. Public Health Bulletin No. 170. Washington, D. C.: U. S. Public Health Service,* 1927. 134 pp.

This survey, which was conducted over a period of one year, October 1, 1924, to October 1, 1925, was made in coöperation with the Sanitary District of Chicago, the Chicago Department of Health and the State Departments of Health of Illinois and Indiana. The report contains 134 pages, with numerous tables and diagrams illustrating the results of the survey. The studies show gross pollution of the waters at the southern end of Lake Michigan by industrial wastes and sewage largely from sources in northern Indiana, especially from the U. S. Ship Canal at Indiana Harbor. The Calumet River was also found to be a factor in the lake pollution. The degree of pollution is such as to constitute a serious hazard to not only the public water supplies of Hammond, Whiting and East Chicago, Indiana, but at times the Chicago supply obtained from the Dunne and 68th Street cribs.

The influence of wind on the travel

of pollution in the lake is strikingly illustrated by diagrams.

The industrial waste problem is largely one of emulsified oils and tarry acid wastes from refineries and steel mills.

It is unfortunate that this survey did not cover a a longer period, as the year studied was one of sub-normal rainfall. It is a valuable document and should be in the library of all sanitarians.

ARTHUR E. GORMAN

A Manual of Veterinary Bacteriology—*By Raymond A. Kelser. Baltimore: Williams & Wilkins,* 1927. 500 pp. Price $5.50.

Major Kelser has attempted to fill a need by producing a textbook dealing with the microörganisms which are pathogenic for animals. Several recent textbooks on animal pathogens have appeared in the German and French languages, but nothing new in English has appeared in recent years. The book, therefore, fills a real need in teaching bacteriology to veterinary students, and as a reference work to those engaged in work on animal diseases.

The book is divided into 11 parts which are designated as follows: 1. Bacteria, Their Morphology, Physiology and Classification, 2. Bacteriological Methods, 3. Infection and Immunity, 4. Pathogenic Organisms of the Class Schizomycetes, 5. Pathogenic Fungi, 6. The Protozoa, 7. The Filterable Viruses, 8. Serology, 9. Hematology, 10. Preparation of Veterinary Biological Products, and 11. Bacteriological Examination of Milk and Water.

The author has adopted *in toto* the classification and nomenclature of Bergey, and apparently has relied on Bergey's work in large part as a guide in compiling the list of pathogenic organisms since several errors in Bergey have been perpetuated and identical omissions of important organisms have been made. The older names of organisms are given as synonyms and these are properly indexed; hence it is possible to find old friends in the book even though they are disguised under unfamiliar terms.

The subject matter of the book appears to be accurate and up-to-date. The list of organisms described is reasonably complete although such important organisms as the *Vibrio fetus,* the *Corynebacterium pyogenes* and the *Bact. viscosum-equi* are overlooked. The chapter on the Preparation of Veterinary Biological Products is unique in a book of this kind and will prove useful to many.

It appears to the reviewer that the section relating to the bacteriology of milk has been inadequately treated. Veterinary students of the present day have need of a much broader knowledge of this subject than is given.

The book should be of value to all persons who are interested in infectious diseases of animals and in those diseases of man which are transmissible from animals. It represents the most compact and accurate descriptions of the organisms of these diseases which are available in English. W. A. HAGAN

Clinical Application of Sunlight and Artificial Radiation, *Including Their Physiological and Experimental Aspects, With Special Reference to Tuberculosis—By Edgar Mayer. Baltimore: Williams & Wilkins,* 1926. 468 pp. Price, $10.00.

This imposing volume upon the relation of light to disease reviews the evidence to determine whether light has earned a place in the treatment of disease; surveys modern methods and applications of light, both natural and artificial; and is undoubtedly the most complete work of its nature in the English language. The book is dedicated to "Edwin R. Baldwin, M. D. of Saranac Lake, N. Y., investigator of tuberculosis, teacher, and inspiring advisor."

The subject of light as a therapeutic agent now has a voluminous literature

and a thorough review is made in the present work. The writer's personal experience has had to do especially with the use of the mercury-quartz light, but also with the carbon arc and sunlight in clinical tuberculosis at Saranac Lake. Where phases of the problem have not come within the experience of the author, the work of others has been drawn upon liberally. A study of X-ray therapy is also included.

Chapter headings and certain subheadings appear as follows:

I. Introduction and historical
II. The nature of radiation, including analysis of sources, interaction, and luminescence
III. Some fundamental considerations on the action of light in animal and plant life
IV. The action of light on growth and nutrition, including germination, phototropism, and the analysis of light action and metabolic changes
V. The effect of radiant energy upon bacteria and related biological products
VI. Physiological action of light, including radiant heat, its penetration, the phenomena of erythema; and the effects upon special organs and functions
VII. The skin as an organ
VIII. The sensitization of tissues to light
IX. Some experimental studies (including valuable contributions by the author upon experimental tuberculosis in lower animals, and a summary of the work of others)
X. The influence of climate on solar radiation
XI. The clinical application of solar- and aerotherapy including air baths, heliotherapy, etc.
XII. The sources of light used in therapy, with discussion of the various forms of carbon-arc lamps, the use of the mercury-quartz and tungsten lamps and their comparison
XIII. Clinical studies with artificial light
XIV. The dosage and technic in the clinical use of artificial light
XV. Indications and contra-indications for irradiation, both natural and artificial, and in various forms of tuberculosis
XVI. The X-ray treatment of tuberculosis in various organs and parts

Appendix — This includes special papers upon the influence of light on biological reactions, chemical reactions, phytosynthesis, the action of light on carbohydrates, protein, lipoids, oxidation and reduction, and ferments, and the theory of light action.

A bibliography is included consisting of some 2500 authoritative sources of information in the field. An author index lists those whose works are cited in the present book. The subject index given has been found by the reviewer to be quite complete. Repetition of statement and thought occur occasionally from chapter to chapter but in such a manner as to really add to the value of the work.

The book is profusely illustrated with graphs, diagrams, and tables, and contains 37 full-page plates, each with ample caption and legend. The work makes absorbing reading to anyone interested in the subject. Dr. Mayer has truly contributed an encyclopedic production of highest authority to the field of light therapy.

EMERY R. HAYHURST

Textbook of Bacteriology—*William W. Ford, M. D. Philadelphia: Saunders,* 1927. 1069 pp. Price, $8.50.

A useful reference book but not a textbook in the sense that it can be put into the hands of students. The author has evidently spent a number of years in the collection and compilation of the material included. The book is divided into 6 parts. Part I is entitled "General Bacteriology" and deals with methods of observing and cultivating bacteria. The number of stains and media given is more than sufficient for most laboratory purposes. Part II is called "Systematic Bacteriology." This section takes up more than half of the book and is by far the most valuable portion. The classification of bacteria suggested by the Committee of the Society of American Bacteriologists of which Professor C.-E. A. Winslow was chairman is followed. No mention is made of *Bergey's Manual.* This omission will doubtless be regarded by some bacteriologists as a recommendation for Dr. Ford. The scheme of

classification as given lends itself to easy use by the student attempting to identify an organism. If Part II had been published alone, it would represent a real contribution. Parts III and IV deal with the distribution of bacteria and with infection and immunity. Much of this material is brief and inadequate and is certainly not up to date. In fact, the reviewer has failed to find a reference in the entire book later than 1924. Part V contains descriptions of the Spirochetes, and in Part VI diseases of unknown etiology are discussed.

The book is profusely illustrated with plates made under the author's direction. These are a real asset.

JOHN F. NORTON

American Illustrated Medical Dictionary—*The terms used in Medicine, Surgery, Biology, Dentistry, Pharmacy, Chemistry, Nursing, Veterinary Medicine, and kindred branches—By W. A. Newman Dorland, M. D., Philadelphia: Saunders, 1927. (14th ed. rev.) 1388 pp. (319 ill., 107 in colors).* Price, $7.00, Thumb Index $7.50.

In reviewing a dictionary, one is always reminded of the countryman who undertook to read one, and in commenting on it, said: "I found it very interesting, but it changed the subject too often."

It is manifestly impossible to examine every word, and one can only judge of a dictionary by looking up a number of test words.

This dictionary has gone through fourteen editions, each of which has been favorably reviewed and all of which have stood the test of time. The present edition maintains the high standard set by the author, and certain typographical errors of the preceding one have been corrected.

It is beautifully printed on light paper, and is very free from errors. A number of new words have been added, which the rapid growth of the science of medicine and its allied branches has made necessary. On the title page the name of Dr. E. C. L. Miller, Professor of Bacteriology and Biochemistry at the Medical College of Virginia, appears as collaborator.

The work can be recommended as one of the most useful and complete of its type on the market. M. P. RAVENEL

Towards Health—*By J. Arthur Thomson, M. A., LL.D., New York: Putnam,* 1927. 361 pp. Price $2.00.

One always looks forward to the appearance of a book by the author with more than usual pleasure, as there are few writers who have so much sound knowledge or who can put what they have to say in such an attractive manner.

The present volume is unlike any from this author with which we are acquainted, and we cannot help thinking that he is not at his best in this new field. His object is to explain health from the biological standpoint, and expound the fundamental principles involved. To attain this aim, he has evolved what he calls the "biological prism," "Organism, Function, Environment," which he translates into the common words, "Folk, Work, and Place."

He holds very correctly that throughout the whole of life, good health makes for good morals and good manners, and that in every period of life, health is of the utmost importance. During childhood, adolescence, maturity and aging, health must be earnestly sought, though he properly gives a warning against becoming absorbed in the pursuit of health, in season and out of season, and draws the moral that we should "covet the best gifts and health will be thrown in."

The last chapter, "Vis Medicatrix Naturae: A Summary," emphasizes nature's power and methods of cure, speaks of the small amount of disease in "Wild Nature" as compared with that seen in

man and domestic animals, the absence of senility in wild animals, and gives some explanations of the facts. Civilization and domestication, with their sheltering influences, and the balking of natural selection, are chief causative factors.

The book had its origin in a series of popular Saturday Evening Lectures, given yearly by members of the Medical Faculty of the University of Aberdeen. They are known as the Farquhar Thomson Lectures, the object of the Trust being to promote the cause of health among the people.

One can always read what Professor Thomson writes with profit and pleasure. The book is beautifully printed on light paper and well made up. M. P. RAVENEL

Dental Education in the United States and Canada—*A Report to the Carnegie Foundation for the Advancement of Teaching—By William J. Gies* (*Bulletin No. 19*). *New York: The Carnegie Foundation,* 1926, 692 pp. Free upon application to the Foundation.

This report maintains the high quality of the earlier bulletins on education issued by the Carnegie Foundation. It is sound, comprehensive, and thorough. The last 450 pages of the book present detailed facts concerning each of the dental schools in the United States and Canada. The first 242 pages deal with the professional, public health, and educational problems of dental education.

The author presents a fascinating story of the history of dentistry and its emergence from prehistoric customs. He pictures the early days of unscientific dentistry, the early belief of physicians and laity that the teeth were not related to health, the refusal of a medical faculty in 1839 to develop dental education under medical auspices on the ground that "the subject of dentistry was of little consequence," the development of independent dental schools and their later elevation to the rank of other professional schools in the universities of the country. It is made apparent that dentistry is becoming more medical in both training and perspective. Yet dentistry is distinct. The dentist is not allowed to practice medicine and the physician is not allowed to work upon the teeth without a special or dental license. The author points out that the development of dentistry into the equivalent of an oral specialty of the practice of medicine requires still broader definition, scope and educational opportunity. He believes that dentistry cannot be superimposed upon a medical education because of the large number of years required in training and because of the digital facility required in dental practice and demanding extensive clinical training.

The suggestion is made that dental education should be based upon a predental training of 2 years in college, that it should consist of 3 years of undergraduate professional training which would equip the student for general practice, and that an additional or a special graduate year should be offered leading to specialization. Several of the best dental schools have already gone upon essentially this basis.

The report discusses: the statutory regulations relating to dental practice; the types, number and distribution of dental practitioners; the deficiency of dental service for negroes; the regulation of dental schools by professional organizations; the curriculum, equipment and research of dental schools. The proposed general reorganization of dental education, with an improvement in the nature and quality of instruction, better clinical service and financial support, is clearly presented. Dental education in Canada is given the same type of treatment as that in the United States.

In the excellent section on General Views and Conclusions (Chapter XII)

the report summarizes from a broad, public health viewpoint: the problems of the relation of the teeth to health, the prevalence of dental disorders, the deficiencies in oral health service, the present failure in preventing dental disorders and the main requirements for the improvement of oral health service.

C. E. TURNER

Keeping Well—*By Kate Platt, M. D., B. S. London: Faber & Gwyer,* 1927. 246 pp. Price, $1.25.

Among the large number of books on the general subject of health written for the lay public, there are few that we can commend more heartily than the present. It is conservative and essentially sound, emphasizing the fact that our most successful efforts will be in assisting and directing nature, rather than indulging in drastic treatments, and running after fads. We like particularly the emphasis laid on giving nature a rest in the way of holidays, which, as the author says, bring about a readjustment of mind and body and allow nature to express herself in ways which are often suppressed. The necessity of frequent short holidays, and longer ones occasionally, has been emphasized recently in this country as a means of preventing high blood pressure. Certainly the results are all to the good.

One minor criticism may be made. The author speaks of a poor complexion as being evidence that "the condition of the blood is unsatisfactory." There is little doubt that many people will construe this to mean that so-called blood purifiers must be taken, though the context shows that good feeding is the point involved. In many cases of pimples and boils there is no evidence that the blood is at fault.

The book is of convenient size and well printed on the light paper which the English are so fond of using. It is readable as well as sound. M. P. RAVENEL

The Organization and Administration of Health Education in the Secondary Schools of the United States—*By Fred Lea Stetson and Frederick W. Cozens. University of Oregon Publication, Vol. 1, No. 2, Education Series,* June, 1927.

This is a very useful compilation of the important facts regarding health education in secondary schools of the country, as determined by statutes and administrative measures. The legal basis, the character and extent of the supervision, and the relation of the program to physical training and other school activities are summarized; and there are recommendations pointing out the needs as indicated by the survey. There is a bibliography of some sixty titles. One is impressed by the wide range of practices in the different states and the almost universal need for a critical reexamination of what is being done for health education, as well as for a critical restatement of objectives.

B. C. GRUENBERG

Tuberculosis in Infants—*By M. Alice Asserson, M. D. New York: New York Tuberculosis and Health Association.* 378 pp.

This report of the Children's Service of the N. Y. Tuberculosis and Health Association deals with the incidence, significance and course of infection of tuberculosis in racial and other groups and its relation to exposure. The facts upon which the report is based were collected from the records of infants brought to the baby health stations and clinics of the association and to city hospitals. The report states that among 4,003 infants under 2 years of age in two hospitals and clinics in New York City, the incidence of tuberculous infection was 11.4 per cent. Several among these had advanced tuberculosis. Among 1,656 infants of the same age, in attendance at baby health stations where the

majority were in good health, and in clinics, among whom none had manifest tuberculosis the incidence of infection was only 3 per cent.

Troubles We Don't Talk About—*By J. F. Montague, M. D., F. A. C. S., (Ill.) Philadelphia: Lippincott,* 1927. 248 pp. Price, $2.00.

The dedication of this book describes it as well as any lengthy review could do: "These pages are dedicated to those who suffer in silence, linger in doubt and carry on in despair, so that they, too, may enjoy better health and longer life." It deals with what are generally considered minor ailments, concerning which a physician is not consulted.

We will add that the object as announced has been well carried out, and it is seldom that a reviewer has submitted to him a book which is so interesting and for which there is so little room for criticism.

We would like to call special attention to what is said about the advertisements of the producers of various sorts of foods, and the concluding statement: "Thus the billboards have become the menu card of our nation."

The book might be more fully illustrated with advantage, though such illustrations as it contains convey their meaning clearly. It is well printed on light paper with a mat surface.

M. P. RAVENEL

BOOKS RECEIVED

PARENTHOOD AND THE CHARACTER TRAINING OF CHILDREN. By Thomas Walton Galloway, Ph. D., New York: Abingdon Press, 1927. 224 pp. Price, $1.00.

CONVALESCENCE, HISTORICAL AND PRACTICAL. By John Bryant. White Plain: Burke Foundation, 1927. 269 pp. Price $5.00.

PULMONARY TUBERCULOSIS. (2d ed.). By David C. Muthu, M. D. New York: Wm. Wood, 1927. 381 pp. Price $5.00.

PHYSICAL CHEMISTRY AND BIOPHYSICS FOR STUDENTS OF BIOLOGY AND MEDICINE. By Matthew Steel, Ph. D. New York: Wiley, 1928. 372 pp. Price, $4.00.

THE RATE OF LIVING. By Raymond Pearl. New York: Knopf, 1928. 185 pp. Price, $3.50.

TONIC HARDENING OF THE COLON. By T. Stacey Wilson. New York: Oxford, 1927. 210 pp. Price, $2.50.

THE TEETH AND THE MOUTH. By Leroy L. Hartman. New York: Appleton, 1927. 93 pp. Price, $1.50.

THE CHILD AND THE HOME. By B. Liber. New York: Vanguard Press, 1927. 248 pp. Price, $.50.

THE ABILITIES OF MAN. THEIR NATURE AND MEASUREMENT. By C. Spearman. New York: Macmillan, 1927. 415 pp. Price $4.50.

PETERSHAM'S HILL. By Grace Taber Hallock. New York: Dutton, 1927. Price, $2.00.

THAT MIND OF YOURS. By Daniel B. Leary. Philadelphia: Lippincott, 1927. 226 pp. Price, $1.75.

THE CURRENT SIGNIFICANCE OF THE WORD "ALUM." By William D. Richardson. Chicago: Commonwealth Press, 1927. 93 pp. Price, $1.00.

AMERICAN RED CROSS TEXT BOOK ON FOOD AND NUTRITION. A STUDY OF THE BASIS OF FOOD SELECTION. By Ruth Wheeler in collaboration with Helen Wheeler. Philadelphia: Blakiston, 1927. 123 pp. Price, $.60. (paper cover)

SOURCES OF INFORMATION ON PLAY AND RECREATION (rev. ed.). By Marguerita P. Williams. New York: Russell Sage Foundation, 1927. 94 pp. Price, $1.00.

OCCUPATIONAL GROUPS AND CHILD DEVELOPMENT. By Stuart M. Stoke. Cambridge: Harvard University Press, 1927. 92 pp. Price, $1.00.

HEALTH DEPARTMENT AND OTHER REPORTS

IRA V. HISCOCK

Philadelphia, Pa.—Accomplishments of the Philadelphia Department of Public Health from 1924 to the middle of the year 1927 are reviewed in a special issue of the monthly bulletin for November. This report is characterized by interesting text summaries of the health and hospital bureaus and by the use of good photographic and statistical illustrations of activities and results. The entire publication consists of 32 pages, size 11¼ x 9 inches, printed in good type in relation to the length of line and kind of paper used.

A threatened smallpox outbreak in the spring of 1926 stimulated general vaccination, at which time about one-half million people were thus protected. An intensive diphtheria immunization campaign was undertaken in 1924, since which time 255,604 persons have been immunized (192,555 in public and parochial schools and 63,049 in clinics, day nurseries, etc.). In the contagious disease hospital, a suction apparatus used in the treatment of patients ill of laryngeal diphtheria, seems to have given favorable results. The use of scarlet fever antitoxin has become more extensive than previously with apparently lowered death rates resulting. Convalescent measles serum, and parental whole blood have been utilized to prevent outbreaks of measles, especially in hospital populations.

School nurses during the year secured the correction of 139,750 of the physical defects (over 50 per cent of those recommended for treatment) found in pupils by school medical inspectors. Infant mortality is the lowest in the history of the city and has been cut in half during the last 15 years. Each year there is observed a Public Health Day when health talks are delivered by prominent speakers before various clubs; exercises are conducted in schools; radio talks are given, etc. These campaigns emphasize the importance of periodic health examinations, the prevention of diphtheria, and the early diagnosis of cancer.

The report describes the organization of the medical emergency corps of Philadelphia to meet any medical emergency which may arise in or about the city. Interesting and detailed accounts of the various hospitals, including the hospital for mental diseases, conclude this record of progress.

U. S. Army—The Surgeon General's report for the fiscal year ending June 30, 1927, contains much information of interest to public health workers as well as to those directly connected with Army affairs. It is a report which abounds in carefully prepared text tables (171) and graphic figures (50). Tabular headings are complete but concise, while headings and sub-headings are effectively used in the text. A carefully prepared table of contents at the front and an alphabetical index at the back facilitate a study of this report of 501 pages.

The mean annual strength of the total Army for the year, exclusive of nurses, was 132,377. The admission rate to the sick report from all causes, and from diseases, was highest for the white troops in the Philippine Islands. The second highest rate from all causes was for the Porto Ricans in Panama. The leading causes of admission for the total Army from diseases were bronchitis, influenza, tonsillitis, and gonorrhea; and the leading causes from external causes were in-

juries resulting from athletic exercises, falls, animals (non poisonous), and automobile accidents. An annual death rate of 3.94 per 1,000 was recorded, as compared with 3.77 in 1925. The advance in the death rate from diseases was due to an epidemic of respiratory diseases during the first 4 months of the year. The leading causes of death in order of magnitude were: suicide (44), pneumonia, all forms (41), drowning (36), and tuberculosis (33).

In his letter of transmission, the Surgeon General emphasizes the need for increased personnel. "A Medical Department capable in time of peace only of rendering attendance for the sick and wounded, to the entire exclusion of major national defense objectives, is certainly not desirable. Such a contingency is probable in the near future unless more personnel is authorized."

Forsyth Dental Infirmary—The 12th annual report of the Forsyth Dental Infirmary for children contains the following significant paragraph: "In the effort to secure the prevention of tooth defects, all sources and kinds of treatment are being utilized as indicated, including ultra-violet irradiations, cod liver oil, dietary changes and stimulation in function of the endocrine glands as an aid in improving calcium metabolism. This is of course in addition to the already well established practice of early dental treatment which has given such satisfactory proof of its efficiency."

In addition to important research studies, and work with children (up to age 16), the dental prenatal clinic developed in coöperation with the Community Health Association of Boston assists in conserving the mother's teeth and in developing good teeth for the child. Children from families financially unable to obtain the service of a private dentist come to the infirmary through the public and parochial schools, social centers, institutions, physicians and dentists, and are also brought by their parents. In 1926, 182 certificates were awarded to classes with "all dental work completed."

White Plains, N. Y.—An excellent report for a city of 28,707 people is that of White Plains. The report is printed on soft paper, in type easily read, and includes as features: a detailed appraisal, two good photographs of the department building and offices, and several charts and graphs. The lower half of the title page contains a graphic representation of the appraisal of the various functions of the department. The second page gives the department organization, while pages 3 and 4 contain a table of contents. The total score, on the basis of 1,000 points, of health practice in this city is 827. A per capita expenditure by the health department of $.85 compares with one of $.80 by the nursing associations, $.56 by the Board of Education for Health, and $1.22 by the Department of Charities for communicable disease and psychopathic cases.

During 1926, 71 per cent of the babies were born in hospitals. A birth rate of 24.6, a death rate of 11.3, and an infant mortality rate of 50 are reported.

Lowell, Mass.—The 49th annual report of the Lowell Board of Health for 1926 is bound in soft blue covers with a well arranged front cover. Introductory pages show the organization of the board and department, the expenditures for the year, and most important vital statistics. On the basis of an estimated population of 112,759, a death rate of 13.7 was recorded. An infant mortality rate of 89.6 compares with one of 83 for the previous year. Figures for the past 33 years, from 1893 up to and including 1926, "make apparent an infant mortality rate in which the number of deaths has been lessened 66 2/3 per cent."

The milk inspector's report is one of the most interesting features because of

the detailed analysis of activities and results. The per capita daily consumption amounted to 0.7 pint, 68 per cent being pasteurized. There were 81 dealers, 20 operating pasteurizing plants.

New Hampshire—The biennial report of New Hampshire for the period ending June 30, 1926, indicates increased scope of activities and greater demands for service. "The educational work which the department has carried on for years through bulletins, lectures, etc., is fast bearing fruit." Considerable effort has been directed to the safeguarding of water supplies, with favorable results. A birth rate of 20.79 and a death rate of 14.51 for the year 1925 are recorded. Four new laws enacted at the 1925 session of the legislature included: (1) bottler's licensing and registration law, (2) juvenile camp licensing law, (3) household chemicals law, and (4) law regulating the composition of embalming fluids. An account of inspection procedures of juvenile summer camps, with a list of summer camps in the state, showing address, attendance, and water supply, is one of the features of this 254 page report.

Philadelphia Schools—School health administrators will find in the 1926 report of the Division of Medical Inspection of Philadelphia (Pa.) Pubiic Schools many interesting records of activities and results. A photograph on the title page of a school body, 97 per cent immunized against diphtheria, is at once suggestive of the preventive campaign being waged. In all, 122,000 pupils were immunized in 4 months. The personnel for the entire school health program consisted of 1 director, 12 supervisors, 97 medical inspectors, 1 head nurse, 95 nurses, and 7 clerical assistants. There were 229,054 pupils in elementary schools, with 28,678 in senior high, normal and trade schools, and 10,160 in continuation schools. The yearly cost per pupil (not including continuation schools) of the service was $1.16.

Routine physical examinations numbered 241,146, with 72,447 pupils being classed as physically normal. There were 270,564 defects recommended for treatment, 51.5 per cent of which were corrected during the year. The data concerning these problems are analyzed in considerable detail. Nurses made 37,709 visits to schools and 9,870 visits to pupils' homes. Nutrition and nutrition-tuberculous classes are of the open window type; in the latter group there are approximately 125 children who suffer from incipient but definite tuberculosis.

This division furnishes necessary medical service for the Bureau of Compulsory Education in connection with the issuance of employment certificates to children between the ages of 14 and 16 years. Approximately 31,183 examinations were made, and 4,126 children were refused certificates at the time of their first application. Over half of these children later secured the correction of disqualifying defects and obtained certificates. In several hundred cases there was restriction against employment of the child among power driven machinery, because of imperfect eyesight, imperfect hearing, or other good reason.

Worcester, Mass.—Graphic analyses of tuberculosis cases reported annually by wards, for 5 years, with effective representation of attendance at clinics, feature Worcester's 1926 report. During the summer, 207 children attended Sterling Health Camp, where 103 were given X-Ray examinations in addition to the routine physical. On the basis of a population of 190,757, a birth rate of 22.5 and a death rate of 14.17 are recorded. It is noteworthy that a record of the principal communicable diseases for the year is maintained by wards of the city.

A SELECTED PUBLIC HEALTH BIBLIOGRAPHY WITH ANNOTATIONS

RAYMOND S. PATTERSON, PH.D.

Vaccination and Tetanus—Epidemiological evidence is presented which indicates that post-vaccination tetanus, when it develops, tends to follow severe primary vaccinations performed with large insertions and dressed with some type of shield or covering strapped to the site. An important contribution with which all health workers should be familiar.

ARMSTRONG, C. Tetanus Following Vaccination Against Smallpox and Its Prevention. Pub. Health Rep., 42:50 (Dec. 16), 1927.

Maternal Mortality—The growth of prenatal clinics in America and the steps under way to increase the value of this service is summarized. The goal is to make this country not the most unsafe, but the safest for women during the period of childbirth.

BAKER, S. J. Maternal Mortality in the United States. J. A. M. A., 89:24 (Dec. 10), 1927.

Goiter and Scholarship—Data are presented to show that students with normal thyroids more frequently attain high scholastic standing than do goitrous persons.

BEARD, J. H. Endemic Goiter and Scholastic Standing. Nation's Health, 1:12 (Dec.), 1927.

British and American Longevity—The expectation of life of males was about the same in both America and Great Britain in 1921 (being 55.5+); whereas, for women the expectation was 59.5 in England 57.7 in tne United States.

BRITTAIN, R. H. Expectation of Life in England and in the United States. Pub. Health Rep., 42:48 (Dec. 8), 1927.

Measles Epidemiology—An interesting paper emphasizing the importance of nursing and hygiene in preventing measles mortality, and the predictability of measles outbreaks. Rational preventive measures are outlined and urged.

GODFREY, E. S. Epidemiology of Measles. Nation's Health, 9:12 (Dec.), 1927.

Cannery Supervision—A symposium by British health authorities on the supervision of meat, fish, fruit, and vegetable packing, and the sanitary inspection of canned products.

GRANT, R., et al. Canned Meat-Preparation and Inspection, etc. J. Roy. San. Inst., 47:6 (Dec.), 1927.

Antirachitic Factor in Milk—Cow's milk produced under ideal conditions contains negligible amounts of the antirachitic factor—even human milk does not protect against rickets. A technical dissertation concluding that fish oils, egg yolk, and liver are the most available sources.

HESS, A. F., and WEINSTOCK, M. A Study of the Antirachitic Factor in Human Milk and in Cow's Milk. J. Dis. Child., 34:5 (Nov.), 1927.

Vaccine Virus As An Antigen—Studies confirming the statement that animals may be immunized by injections of killed vaccine virus, and passively immunized by immune serum.

HUNT, L. W., and FALK, I. S. Some experiments on the Antigenic Properties, Filterability and Microscopy of Vaccine Virus. J. Immunol., 14:6 (Dec.), 1927.

University Student Health—An address on the health influence of colleges, covering student health conservation, education regarding individual and community health, the training of sanitarians, and the promotion of research.

KERR, J. W. The University in Relation to the Public Health. Pub. Health Rep., 42:47 (Nov. 25), 1927.

Heredity and Rheumatism—An attempt to marshall the evidence in favor of the hereditary influences of rheumatic fever. Interesting mental gymnastics, the practical value of which is none too apparent, for the author does not suggest the remedies if his contention were true.

JONES, A. B. The Hereditary Factor in Acute Rheumatism. J. State Med., 35:12 (Dec.), 1927.

European Supervision of Midwifery—The saving of maternal and infant life through rationally supervised midwifery in Europe is offered as an example of what might be done in those states of our own enlightened country which do nothing to improve conditions among their midwives. Another story to jar our complacency.

KOSMAK, G. W. Results of Supervised Midwife Practice in Certain European Countries. J. A. M. A., 89:24 (Dec. 10), 1927.

Teaching Hygiene—A description of the methods used in teaching practical hygiene in the Newton (Mass.) schools. The children suggest health topics, choose their order of presentation and develop courses with little aid from their teachers.

LATIMER, I., and SIMON, C. Teaching Hygiene to Grammar and High School Pupils. Nation's Health, 9:12 (Dec.), 1927.

Needs of County Health Units—Adequately trained health officers and subordinate officials are the most pressing needs in the extension of the county health unit program.

LAUGHINGHOUSE, C. O'H. County Health Work. J. A. M. A., 89:26 (Dec. 24), 1927.

Milk Consumption—An average per capita milk consumption of 0.48 quarts in Massachusetts during 1923 indicates that the ordinary estimates of milk consumption are too high.

MCFALL, R. J. Per Capita Milk Consumption in Massachusetts. Nation's Health, 9:12 (Dec.), 1927.

British Milk Supervision—This illuminating account of the formalities and red tape demanded by British law when grossly contaminated milk is received will cause American sanitarians to thank their lucky stars that more direct and effectual powers are granted by our health laws.

LLOYD, J. S. Tuberculous Infection in Milk as Affected by Recent Legislation. J. Roy. San. Inst., 47:6 (Dec.), 1927.

"Normal" Growth and Diet—Records are presented to indicate that rats may be made to grow at a greater rate than that regarded as "normal," and that the "curve of repair" scarcely surpasses the true normal growth upon appropriate diet.

MENDEL, L. B., and CANNON, H. C. The Relation of the Rate of Growth to Diet. J. Biol. Chem., 75:3 (Dec.), 1927.

Dietary Deficiencies—Studies are presented which lead to the conclusion that foodstuffs carrying vitamins A and B contain other growth promoting substances than the generally accepted water-and fat-soluble groups, without which optimum growth is not attained.

PALMER, L. S., and KENNEDY, C. The Fundamental Food Requirements for the Growth of the Rat. J. Biol. Chem., 75:3 (Dec.), 1927.

Infant Diets—An interesting diet table for children of from 6-13 months is presented. It provides, first, the fats, then the roughage and vitamins needed to establish correct alimentary functions.

PRITCHARD, E. Preventive Treatment of Digestive Troubles in Young Children. Lancet, 2:26 (Dec. 24), 1927.

Streptococci Causing Abortion—A pleomorphic streptococcus recovered from the tonsils and placenta of a woman having repeated abortions produced abortion or uterine hemmorage in rabbits. The study corroborates the theory that focal infections of streptococci may give rise to spontaneous abortion.

REITH, A. F. Streptococci As a Cause of

Spontaneous Abortion. J. Infect. Dis., 41:6 (Dec.), 1927.

Scarlet and Diphtheria Mixed Infections—Of 100 diphtheria patients, 29 gave cultures of hemolytic streptococci from nose or throat. Of these, 16 were shown to be scarlatinal. It is possible that some were scarlet fever cases in diphtheria carriers. Results indicate the advisability of individual isolation.

RHOADS, PAUL F. The Incidence of Scarlet Fever Streptococci in Throats of Diphtheria Patients. J. Infect. Dis., 41:5 (Nov.), 1927.

A City Cardiac Survey—Of the 120,000 school children in Boston, 2311 heart cases were picked up in the routine school child examinations. The majority (1,344) were found to have no significant disease; 265 were classed as doubtful, requiring reëxaminations; the remainder required special treatment.

ROBEY, W. H. A Cardiac Survey of Children in Boston Public Schools. Nation's Health, 9:12 (Dec.), 1927.

Exercise for Cardiacs—A paper emphasizing the importance of supervised, graduated exercise after recovery from heart infections; assuming that the attack has come to a close only when the temperature has not risen above 99.60° F. for ten consecutive days.

ST. LAWRENCE, WILLIAM. The Problem of Exercise for Children with Heart Disease. J. A. M. A., 89:27 (Dec. 31), 1927.

School Sanitary Survey by Laymen—The Kentucky Rotary was called in to conduct a survey of the rural schools. An inspection blank was furnished and instructions printed. A follow-up to improve the insanitary conditions found is now in progress.

THOMAS, A. A. Kentucky Rural School Survey on Health and Sanitation. Nation's Health, 9:12 (Dec.), 1927.

Antirachitic Effect of Sunshine—A series of important papers measuring the antirachitic effect of direct sunlight at various seasons; the effect of skyshine (indirect sunlight); and sun's rays through the special window glasses. Too inclusive for summarization here.

TISDAL, F. F., and BROWN, A. Seasonal Variation of Effect of Sunshine (and other papers). J. Dis. Child., 34:5 (Nov.), 1927.

Endemic Goiter Prophylaxis—The endemic goiter occurring in an urban district in England in which there is little possibility of iodine deficiency cannot be attributed to that cause. Iodine prophylaxis hence cannot be recommended. The author suggests vitamin deficiency as a possible cause, and emphasizes the spontaneous recovery in many cases.

TURTON, P. H. J. Prophylaxis and Treatment of Childhood Goiter. Lancet, 2:23 (Dec. 3), 1927.

Undigested Proteins—That a proportion of the protein intake may be absorbed undigested under certain conditions has long been a commonly accepted fact. Here is offered immunologic evidence to prove it. Of interest to health officials dealing with anaphylactic and dietary problems.

WALZER, M. Studies in Absorption of Undigested Proteins in Human Beings. J. Immunol., 14:3 (Sept.), 1927.

NEWS FROM THE FIELD

WARNING AGAINST VACCINATION SHIELDS

FROM the U. S. Public Health Service again comes the warning against the use of any sort of shield or dressing applied to a vaccination spot. It is emphasized that shields or dressings applied to a vaccination often are a cause of severe "takes" and delay healing.

DR. STREETER AWARDED KIWANIS MEDAL

HOWARD R. Streeter, M.D., Fellow A. P. H. A., Health Officer of Manchester, N. H., was recently awarded the Kiwanis Medal for distinguished service to the Community of Manchester. The Kiwanis Medal is given annually to the person or organization that has rendered the greatest service to the community during the year. A marked decrease in contagious disease since 1921 when Dr. Streeter became Health Officer of Manchester was cited among his several public health achievements.

HEALTH SERVICE OFFERED BY CONNECTICUT STATE DEPARTMENT OF HEALTH

THE Connecticut State Department of Health, Bureau of Public Health Instruction, offers a service of films, slides, posters, and health leaflets dealing with several public health topics. The pamphlet *Health Service* lists 42 motion picture films with a brief description of each film. A list of health slides and posters available is also included. This pamphlet is one of the most valuable for the health worker's reference shelf of aids in health education.

A GOVERNOR SPEAKS FOR PUBLIC HEALTH

THE value of public health work was emphasized by Governor Alfred E. Smith of New York in his annual message to the State Legislature. Governor Smith pointed out some of the achievements of the public health program in the past 10 years and emphatically stated:

> Proper attention to the preservation of the public health will produce a strong, healthy, vigorous people. There is no greater state asset.

Governor Smith surveyed the development of the state's public health activities, including the state and local laboratory service, state aid to rural communities, public health education and supervision of water supplies in several municipalities, and supervision of oyster beds on Long Island.

He referred to the amendments to the Medical Practice Act of 1926, the maternal and infant health program carried out, and the school health and nursing programs. He said:

> It must be borne in mind that for thoroughly effective health work, the state must have the full coöperation of the localities. The counties should do their share. The state stands ready to give financial and other aid, but unless there is a live, local interest in the public health problem, the desired progress is difficult to make.

TRAILING A FAKE EYE SURGEON

HEALTH authorities throughout New York State are on the trail of a fake eye surgeon, one Simon Mohr, who has been extracting large sums for his services. For his operations he has selected villages and rural communities. The publicity given to his practices attracted considerable attention. One of the last reports made to the New York State Department of Health is that he rendered services in a family in North Rose, Wayne Co., but only charged $400, a fee much smaller than he had demanded some weeks previous in Orange County.

Commissioner of Health, Dr. Matthias Nicoll, Jr., put the Superintendent of State Police on the search for "Dr."

Mohr, and a warrant for his arrest has been sworn out.

CHICAGO CITY COUNCIL COMMENDS DR. BUNDESEN

AT the regular meeting of the City Council of Chicago, Wednesday, December 14, a resolution was presented expressing appreciation of the services of Herman N. Bundesen, M.D., former Commissioner of Health of Chicago.

It was unanimously voted that the resolution become a part of the public record of the Council proceedings, and that a copy be suitably engrossed and presented to Dr. Bundesen as a token of the esteem and affection in which he was held by the Council members.

The outstanding achievements of Dr. Bundesen's 6 years' administration are cited. He is credited with markedly improving the health of the community through the efficient management of the health department, through new methods of health education, the promulgation of sound policies and rulings, establishment of higher standards of living, advancement of sanitation and more intensive disease control.

The resolution also pointed out that the death rate dropped from 13.71 per 1,000 population during the previous 7 years to an average rate of 11.5 per 1,000, "establishing thereby an unequalled record among all large cities of the nation."

Dr. Bundesen's fight for a pure milk supply, his campaign for the education of mothers in the care and feeding of infants, the establishment of infant welfare stations, and distribution of special health publications—all of which aided in reducing the death rate of Chicago babies under 1 year of age from 89.3 per 1,000 births in 1921 to 63.8 per 1,000 births in 1927—were recorded in the appreciation of his services.

The resolution stated that Dr. Bundesen had developed a department of health whose efficiency has attracted and stimulated the interest in programs of other cities, and one of the greatest recognitions of his ability was his election to the presidency of the American Public Health Association. The Council commended him as an example and inspiration to "health officials the world over."

It concluded:

RESOLVED, that we, the members of the City Council of the City of Chicago, do hereby convey to Dr. Herman N. Bundesen our personal and official appréciation and that of the people of the City of Chicago for the great and valued service the benefit of which no one can overestimate, and that we hereby express the hope that in life's pursuits he will find even greater opportunity to devote his ability and experience to the interest of health, happiness and public well being.

DIPHTHERIA IN MANCHESTER, N. H.

THE first mention of diphtheria in the health department reports was in 1885 when 18 deaths were recorded. The following year, 1886, 9 deaths from the disease were reported; in 1887, 73 cases and 17 deaths were recorded. Since 1887, diphtheria has been reported regularly, and both number of cases and rate have been high, in fact, above the general average of cities of like size. The total number of cases of diphtheria and number of deaths have exceeded the cases and deaths from scarlet fever. The highest number of cases reported in any year was 492 in 1908 and in the same year the highest number of deaths, 41, was recorded; the lowest number of cases was recorded in 1899—but in that same year 9 deaths were recorded and, thus, the number of cases reported is manifestly wrong; the lowest number of deaths, 1, was recorded in 1893. The disease has always increased in incidence soon after schools opened in the fall; the ages of greatest incidence have been 6 and 7; four-fifths of the cases have occurred under 15 years of age. November 1, 1921, control measures,

comprising Schick testing, toxin-antitoxin treatment, antitoxin immunization of immediate contacts, culturing for carriers, quarantining carriers until cured, were instituted. The results were immediate and striking. The incidence both in morbidity and mortality has declined from 469 cases with 31 deaths in 1921, to 9 cases with 2 deaths in 1927. The diagnosis of 1 fatal case in 1927 was in doubt but the cause of death was given as diphtheria and was so recorded.

More than half the school population has been immunized or is Schick negative.

The following table gives the incidence for the past 7 years:

DIPHTHERIA
Rate per 100,000

Year	Cases	Pop.	Deaths
1921	469	585	31
1922	254	317	27
1923	188	230	15
1924	81	99	6
1925	31	37	6
1926	12	14	3
1927	9	10	2

NATIONAL COST OF BLINDNESS

THERE are 100,000 blind persons in this country. The preventable causes of blindness have cost this country more than $100,000,000 in the last 10 years, according to a statement given out by the National Society for the Prevention of Blindness. It is not costing more than $100,000 a year to carry on the work of preventing blindness and conserving vision generally in the United States. Industrial accidents alone cost the industries of the country nearly $10,000,000 every year and are responsible for 15 per cent of our blind population.

The society is directing its efforts against all causes of blindness including ophthalmia neonatorum, trachoma, venereal diseases, industrial eye hazards and accident hazards in public and home life.

FUND TO FIGHT COMMON COLD

A 5-year war against the common cold will be directed by Johns Hopkins University and the Johns Hopkins Hospital, and financed by the Chemical Foundation of New York. A fund of $195,000 to be known as "The John J. Abel Fund for Research on the Common Cold" has been established with a promise that more funds will be raised if needed to continue the research. The research will be conducted on a coöperative basis involving the staff and facilities of every department in the Medical School, the School of Hygiene and Public Health and the University Hospital.

Dr. Abel is professor of pharmacology at Johns Hopkins University, and conducted the researches that led to the discovery and synthetic production of adrenalin. He was the first to isolate the pure chemical principle of insulin.

GOITER SURVEY IN TENNESSEE

A SURVEY of goiter incidence will be made in Tennessee beginning April 2 under the direction of Dr. Robert Oleson of the U. S. Public Health Service. Dr. Oleson is one of the leading authorities on goiter.

School examinations by the Division of Child Hygiene in different parts of the state have shown a considerable variation of incidence of goiter in different sections. Tennessee hopes to determine by Dr. Oleson's survey if it has a goiter problem of sufficient extent and importance to require additional attention of public health officials.

RURAL HEALTH DEMONSTRATION CONTINUED

TO raise the health standards of rural communities and reduce mortality rates throughout the country as the result of its public health experiment in Cattaraugus County, N. Y., directors of the Milbank Memorial Fund have appro-

priated $87,000 for the continuance of the demonstration program in Cattaraugus County. The demonstration program was originally planned for 5 years. This additional appropriation will provide for another year of work. The total grant for the demonstration program has been $500,000. The Cattaraugus County Governing Board has within the 5-year period appropriated $113,000 and the State of New York has contributed appropriations totalling $95,000.

The demonstration is being continued at the specific request of Cattaraugus County health authorities, despite the opposition from a small group in the local medical society.

The conspicuous achievements in Cattaraugus County during the 5-year demonstration period has been a reduction of about one-third in the tuberculosis death rate, and nearly one-fifth in the infant mortality rate. More than 50 per cent of the 150,380 physical defects of the rural school children found by medical examiners have been corrected. Approximately 50 per cent of the children of the county under the age of 10 have been immunized against diphtheria. There has also been a marked reduction in bovine tuberculosis as a result of the program carried out by the demonstration directors in coöperation with specialists and federal and state officials.

DR. PLATT APPOINTED TO NEW POSITION

PHILIP S. Platt, Ph.D., Secretary of the Associated Out-Patient Clinics Committee, New York Tuberculosis and Health Association, has been appointed Assistant Director of that association. Dr. Platt will continue as Secretary of the A. O. P. C., and will also have direct supervision of the Committee on Community Dental Service and the Tuberculosis Committee of the association.

Dr. Platt is a Fellow of the A. P. H. A. and is Chairman of the Public Health Education Section of this Association.

CALIFORNIA

SIR ARTHUR Newsholme, M.D., K.C.B., former chief medical officer of the Local Governing Board of England and Wales, who is spending the winter at Santa Barbara, Calif., was guest of honor at a banquet given by the Southern California Public Health Association at Los Angeles, January 13. About 200 members and their guests were present.

Sir Arthur was introduced by Dr. J. L. Pomeroy, President of the Association. Sir Godfrey Fisher, British Consul, extended the welcome. Sir Arthur spoke briefly, touching upon constructive public health policies.

Sir Arthur Newsholme was instrumental in the forming of the British Ministry of Health, correlating all public health functions under one department and eliminating the confusion arising from many different bureaus acting for the government. He was lecturer on public health administration at the school of Hygiene and Public Health, Johns Hopkins University, Baltimore, Md., 1917-1919.

MASSACHUSETTS

THE 1928 annual meeting of the Massachusetts Association of Boards of Health was held in Boston, January 26, at Hotel Bellevue.

The responsibility for the care and treatment of tuberculosis by the Commonwealth and by the town, city and county with the attendant difficulties of settlement, subsidy, and responsibility is a subject of much concern to those entrusted with this work, besides being confusing as to charges and cost. Therefore three aspects of the problem of tuberculosis were presented at this meeting:

"Present Resources for Handling Tuberculosis in Massachusetts," George H. Bigelow, M.D., Commissioner of Public Health of Massachusetts

"Local Care and Responsibility of Tuberculosis," George T. O'Donnell, M.D., Director,

Division of Tuberculosis, Boston Health Department

"Settlement Laws and their Application to Tuberculosis," William H. Hardy, formerly secretary, Department of Public Welfare, City of Boston

The 1927 officers were reëlected, namely: President—John J. McGrath, Salem; 1st Vice-Pres.—M. Victor Safford, M.D., Boston; 2nd Vice-Pres.—J. U. Paquin, M.D., New Bedford; Secretary—Stephen L. Maloney, Boston; and Treasurer—F. G. Curtis, M.D., Newton.

Executive Committee: George R. Lennon, Haverhill; Lyman A. Jones, M.D., Norfolk; E. H. Trowbridge, M.D., Worcester; J. H. Glennon, M.D., New Bedford; and Jacob R. Sackett, Springfield.

MICHIGAN

OVER 300 sanitarians attended the seventh annual public health conference conducted by the Michigan Public Health Association, an Affiliated Society of the A. P. H. A. and the Michigan Department of Health. This meeting, held at Lansing, January 11, 12 and 13, 1928 was better attended than any of the six preceding ones.

The officers of the Michigan Public Health Association elected for 1928 are: President, John Sundwall, M. D., University of Michigan; Vice-President, Prof. Ellis J. Walker, Western State Teachers College; Secretary-Treasurer, W. J. V. Deacon, M. D., Bureau of Records, State Dept. of Health, Lansing, Mich.; Representative to the A. P. H. A., Guy L. Kiefer, M. D., State Health Commissioner, Lansing, Mich.

Board: T. W. Worley, Michigan Tuberculosis Association; Grace Ross, R. N., Dir. Nursing Division, Dept. of Health, Detroit, Mich.; R. C. Mahoney, Chairman, Public Health Committee, Michigan State Medical Society; Don Griswold, M. D., Deputy Health Commissioner, Michigan State Board of Health; and William G. Stapleton, M. D., Wayne Co. Medical Society.

SOUTHERN CALIFORNIA

THE Pomona Health Center, erected by Los Angeles County at a cost of $68,000 on property given by the city of Pomona, recently opened its doors for service to the public. The new building said to be one of the best equipped health centers in the country has been erected adjacent to the other municipal buildings in the civic center. Every phase of public health service will be housed in this building.

The health center was opened with a formal program attended by Los Angeles County and Pomona city and health officials and representatives of the medical profession.

J. L. Pomeroy, M. D., county health officer and head of the department under which the center functions, visited the health centers of several eastern cities, and is convinced that in the Pomona institution has been incorporated the most extensive public health service of any centers visited.

The Pomona Health Center is the third of such institutions being built by the Los Angeles County Health Department. Health centers are also to be erected at Santa Monica and Belvedere.

TENNESSEE

S. S. Moody, M.D., formerly Health Officer of Weakley County, has accepted the position of Health Officer of Washington County in East Tennessee. Dr. M. D. Ingram, of Gibson County has been recommended to fill the vacancy as Health Officer Weakley County, which is left vacant by Dr. Moody.

Wilson County will have a full-time health department. This is the result of a unanimous vote of the Wilson County Medical Society. Tennessee now has 17 full-time health departments, with 3 counties in addition that have the county sanitary officer plan of work.

VIRGINIA

AT the annual meeting of the Virginia Public Health Association, an affiliated Society of the A. P. H. A., at Suffolk, Va., January 4–5 the following officers were elected: President, C. P. Ransom, M. D.; Vice President, C. H. Dorsum; Secretary-Treasurer and A. P. H. A. Representative, P. S. Schenck, M. D.

PERSONALS

William F. Wild, M.D., has been appointed Health Officer of Bridgeport, Conn., assuming his duties February 1. Dr. Wild resigned his position with the Division of Public Relations of the American Child Health Association to accept the Bridgeport appoint. He was formerly field representative for the American Society for the Control of Cancer, executive secretary of the Minnesota Public Health Association at St. Paul, and also served as director of laboratories and epidemiologist and later health commissioner of the State of Nebraska. Dr. Wild received his medical training at the Tulane Medical School, Tulane, La., and his public health training at Harvard University and the Massachusetts Institute of Technology.

Bernard S. Coleman has been appointed executive secretary of the Hudson County Tuberculosis League, Jersey City, N. J.

George Bevier, M.D., formerly field director of International Health Board, New York, N. Y., is now at Bogota, Columbia, S. A.

W. W. DeBerard, formerly chief engineer of the Chicago Regional and Planning Association is now associate editor of the *Engineering News-Record*, with headquarters in Chicago.

William L. Holt, M.D., formerly of Portland, Me., has become affiliated with the Medical Department of the Ciba Co., pharmaceutical branch, with headquarters in New York, N. Y.

Charles C. Evans, formerly teacher of physiology and Hygiene at Stevens Point, Wis., is at Chicago University doing research work in public health.

Dr. Ethel R. Harrington has been appointed to the staff of the Division of Child Hygiene and Public Health Nursing of the Illinois State Health Department.

Dr. A. W. Haskell, Associate Milk Specialist of the U. S. Public Health Service has been detailed for one year to the Tennessee State Health Department. Dr. Haskell will conduct field investigations in milk control work throughout the state, coöperating with the Tennessee State Health Department.

W. D. Riley, Regional Consultant for the U. S. Public Health Service, has been assigned to the Tennessee State Health Department for a study of venereal disease prevalence in the state.

Harry Bruce Wilson, superintendent of schools, Berkeley, Calif., has been appointed National Director of the American Junior Red Cross. Mr. Wilson will assume his duties February 1. He succeeds the late Arthur W. Dunn who was director of the organization for six years.

Felix M. Massey, Dean of Men, University of Tennessee, Knoxville, Tenn., has been appointed as a specialist in the Land-Grant College Survey being conducted by the U. S. Bureau of Education. Dean Massey's duties will include the preparation of a questionnaire dealing, among other things, with the health services for students and their regulations, and the housing and feeding of students in the colleges.

Edward Bausch, president of the Bausch and Lomb Optical Co., Rochester, N. Y., has been elected an honorary member of the American Microscopical Society "in recognition of more than 50 years of active interest in microscopy."

Dr. Thaddeus P. Hyatt has been ap-

pointed Supervising Dentist of the New York City Department of Health. His services are lent by the Metropolitan Life Insurance Co., where he is director of dental education, to supervise the extension of the department's work among school children which now has a staff of 19 dentists and 25 dental hygienists.

Ira V. Hiscock, Assistant Professor of Public Health, School of Medicine, Yale University, Fellow, A. P. H. A., has been appointed a member of the Board of Health of New Haven, Conn., for 5 years, beginning February 1. The appointment was made by Mayor John B. Tower of New Haven.

Charles E. Miner, formerly executive secretary of the Missouri Social Hygiene Association, St. Louis, Mo., has gone to Chicago to become Superintendent of the Committee of Fifteen. The purpose of the committee is "to aid the public authorities in the enforcement of laws against pandering and to take measures calculated to prevent traffic in women."

Mrs. Frances W. Everberg of Woburn, Mass., has been appointed chairman of the Woburn Municipal Board of Health. Mrs. Everberg is a graduate of the Massachusetts General Hospital Training School for Nurses and during the war served with the Massachusetts General Hospital Unit No. 6.

Dr. Warren E. Danley has been appointed health officer of Union City, Mich. to succeed Dr. Ernest E. Hancock.

Dr. Henry L. Burdeno has been appointed health officer of Dearborn, Mich.

Gerald Wendt, Ph.D., dean of the school of chemistry and physics, and director of the division of industrial research, Pennsylvania State College has resigned, effective in July, to become director of the Battelle Memorial Institute for scientific and industrial research, Columbus, O., which has recently been founded.

Dr. Henry Hanson has been appointed field officer for the Florida State Board of Health with headquarters at DeFuniak Springs. For several years Dr. Hanson has been engaged in the study of yellow fever in Africa.

Dr. Herman N. Bundesen has been appointed Health Director of the Chicago Sanitary District and also Health Editor of the *Chicago Daily News*.

Beginning January 1, 1928, Dr. J. C. Geiger was granted leave of absence for one year by Dr. Kegel, the new Health Commissioner of Chicago.

Dr. I. S. Falk has announced his resignation as Director of Surveys and Exhibits of the Chicago Health Department.

Arthur E. Gorman, in charge of the safety of Chicago's water supply with the Division of Engineering, has been suspended by request of the Health Commissioner. Mr. Gorman has been appointed Epidemiologist of the Chicago Sanitary District.

POSITION WANTED

CHEMIST trained in Food and Drug, Biological and Sanitary Chemistry and Bacteriology desires position as city chemist. Previous experience. Write P. O. Box 150, Boulder, Colorado.

F. & R.'s
GENUINE
GLUTEN FLOUR
Guaranteed to comply in all respects to standard requirements of the U. S. Department of Agriculture.
Manufactured by
THE FARWELL & RHINES CO
Watertown, N. Y., U. S. A.

Kellogg's ALL-BRAN
RELIEVES
CONSTIPATION!